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Making the RIGHT VENDOR PICKS

As many as 400 people in your company are making IT purchases, but few of them are taking steps like establishing the need, selecting a team and choosing a strategy. We have 12 tips from IT managers who have given the vendor selection process a good deal of thought, as well as advice on how to cut through the marketing blather.

IT STRATEGIES

Stories begin on page 32.

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IT CLAMPS DOWN ON RESEARCH SPENDING

Most budgets stand, but CIOs now want specific, comparative product information

BY JULIA KING

Despite the economic downturn and layoffs at many of the big IT research firms, a recent online and telephone survey of more than 50 CIOs suggests that most user companies have yet to significantly cut back on their IT research spending.

But they aren't buying market forecasts and technology prognostications. What users are willing to pay for in a tough economy is the proverbial fishing lesson — highly specific, actionable advice and how-to information they can apply on an ongoing basis.

Russ Lambert, director of e-commerce at $4 billion Wesco Distribution Inc. in Pittsburgh, spent part of his organization's annual $100,000 IT research budget on Cambridge, Mass.-based Giga Information Group Inc.

"The scope of their work was to benchmark our e-commerce site, then teach my Web marketing team how to benchmark the site. They just don't walk away [without training your staff] so you have to hire them again," Lambert said.

Bill Homa, CIO at Hannaford Bros. Co., a 115-store grocery chain based in Scarborough, Maine, wants feature-by-feature comparative product information.

Homa decided against cutting back on IT research for 2002 in December, when the economic downturn worked to push up Hannaford's acquisition of a new mainframe, several Unix servers plus new

IT Research, page 65

Research Tips

1 DEMAND that regular meetings for IT research subscribers to share information and tactics.

2 TAP INTO the IT expertise of vendor companies through industry IT groups, such as the National Retail Federation's CIO Council.

3 PARTICIPATE in IT research surveys in exchange for receiving reports and other information.

IT SHOPS BALANCE SECURITY, PRIVACY

Employee privacy key in cyberattack defense

BY DAN VERTON

The threat of terrorist attacks against corporate America has forced IT departments to try to figure out how to protect employee privacy when implementing new security technologies.

Companies can be held liable if employees' personal information isn't adequately safeguarded, experts warn. So security technology and service providers are increasingly being called upon to educate their clients about privacy issues when those clients set out to enhance their employee authentication and monitoring procedures.

Rebecca Whitener, director of privacy services at Plano, Texas-based Electronic Data Systems Corp., said she has seen an increase in the number of clients interested in biometric access controls, employee

Privacy, page 16

APPS SUPPORT LAGS, USERS SAY

Managers want better patches, response times

BY MARC L. SONGINI

New complaints about the technical support provided by vendors of enterprise applications are surfacing, buttressed by surveys that indicate many users find support lacking.

A half-dozen IT managers contacted by *Computerworld* last week gave vendors such as Oracle Corp. and SAP AG mixed marks on technical support. They pointed to issues such as hard-to-install patches and slow responses to requests for help in resolving problems.

Those have long been bones of contention, but there are signs that a sizable number of users think things are getting worse. For example, more than one-third of the users who responded to a survey conducted by the Atlanta-based Oracle Applications Users Group and New York-based Morgan Stan-

Apps Support, page 65

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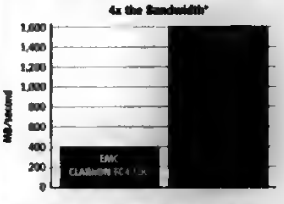

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LARRY BOODE

GRAVITY

SAFE LANDINGS FOR CIOs

Because a growing number of IT executives have reached the board level, it's important to make sure that your contract covers you in the event your company is acquired or goes bankrupt, or your career veers off in another direction. **PAGE 40**

MICHAEL BRADY/CW

TRANSFORMING ENERGY

In 1999, Exelon Corp. software developer Ron Swartz (center) started shadowing traders like George Barnes and Joe MacCrory to see how IT systems could automate and simplify their work. **PAGE 48**

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7 CA can't catch a break as reports emerge of a federal investigation into its accounting practices.

8 Oil and gas companies form an information-sharing system to help guard against physical assaults and cyberattacks.

10 IBM and HP both make server announcements aimed at enabling users to consolidate their apps.

12 ICANN faces up to security holes in the Internet's Domain Name System.

14 Tough economic times compel companies to charge departments for the data storage space they use.

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www.computerworld.com/q?q4000

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32 Picking a vendor isn't just about setting a strategy, it also includes getting buy-in from your differeot departments and making sure the deal makes financial sense for both parties.

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42 Fran Quittel offers advice to an independent consultant who hasn't gotten any nibbles oo several proposals he's written and to a recent college grad with Java and Oracle experience who's looking to move up from his position as a support specialist at a telecom.

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45 Columnist Nicholas Petreley expands on his view that IBM has an ace in the hole called "hardware devolution."

46 Job scheduling tools, those venerable IT workhorses, are now XML-enabled, event-driven and work across multiple platforms, representing several leaps forward from their mainframe-era predecessors.

50 Future Watch: New techniques in programming computers to play games are likely to find use elsewhere, say experts.

52 QuickStudy: Find out about the protocols that make a cable more than just a wire in this week's tutorial.

54 Security Journal: Security tools identify a potential hacker, but human detective work by security manager Vince Tuesday and his staff finally closes the case.

OPINIONS 24

24 Maryfran Johnson says data privacy protection is just like airline security today and asks if your privacy practices would satisfy customers and the government.

24 Pimm Fox writes that the Liberty Alliance isn't considering what users want in its push for a Web services standard.

25 Michael Gartenberg says IT departments should unshackle restrictive policies and issue more laptops to their end users.

26 Sun's Scott McNealy and Microsoft's Brian Arbogast face off over trust in Web services.

66 Frank Hayes urges IT not to be sloppy with the administratioo of Web servers and in securing the data that reside on them.

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ONLINE

BEING READY

Many companies have lots of work to do to when it comes to disaster preparedness, writes Doran Boroski at Compass America in our Security Community.
www.computerworld.com/security

THE COURTS AND THE CODE

What do you think of a federal judge's ruling ordering Microsoft to show its Windows source code to the nine states that didn't go along with the Justice Department's antitrust case settlement? Post your thoughts and read what others have to say in our forum.
www.computerworld.com/q?a1600

WHAT'S A QUICKLINK?

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Use QuickLinks to see related stories, discussion forums, research links, archives and more.

AT DEADLINE

Microsoft Patches Three Holes . . .

Microsoft Corp. released three separate software patches for security vulnerabilities that could affect some of its key products, including Internet Explorer, Windows XP, SQL Server 2000 and Commerce Server 2000. The security holes were all given "critical" severity ratings by Microsoft, which urged systems administrators to install the patches as soon as possible.

. . . And Readies Tool For Security Scans

Microsoft next month plans to ship a free tool that's designed to scan Windows-based systems for security vulnerabilities in the operating system itself as well as the company's other products. The Baseline Security Analyzer supports Windows XP, Windows 2000 and Windows NT 4.0 and will replace an earlier piece of freeware released last summer.

Enron to Auction Its U.K. Unit's IT Assets

Houston-based Enron Corp. plans to sell the IT equipment and other assets used by its London-based unit in a three-day online auction that starts Wednesday. The sale includes 50 Cisco Systems Inc. switches and routers, 3,000 Compaq Computer Corp. PCs and 500 Compaq and Sun Microsystems Inc. servers. The auction will take place at www.dovebid.com, which is owned by DoveBid Inc. in Foster City, Calif.

SafeWeb Plugs Holes in Privacy Tool

Emeryville, Calif.-based SafeWeb Inc. said it patched security vulnerabilities in an online privacy software tool that it developed. The holes, which were reported this month by two security researchers, involve the software's use of JavaScript and master cookies.

Microsoft Explores New Software Areas

Users express potential interest in getting storage, security offerings from vendor

BY CAROL SLIWA

MICROSOFT Corp. will find some receptive corporate users as it explores partnerships and potential technology developments in the storage and security software markets.

Several corporate users said last week that they would be interested in new storage and security offerings from Microsoft because they have extensively deployed the vendor's Windows server operating system to run their applications.

Tom Pane, vice president of technology at New York-based AnnTaylor Stores Corp., said the retailer has more than 100 Windows NT servers, plus about 25 Unix servers from Sun Microsystems Inc.

To monitor storage, AnnTaylor uses a tool from Austin, Texas-based Tivoli Systems Inc. But Pane said he would like to get more detailed analysis than the tool provides.

Pane said the Tivoli product can tell him when his servers reach 75% capacity, but it won't manage volume or show dwindling disk space and growth trends that could help him make storage migration decisions.

"You can buy from third-party vendors, and you can string together solutions, but it really should be coming from Microsoft themselves, and they're not really there today," he said.

Frank Orlow, manager of Clark Retail Enterprises Inc. in Oak Brook, Ill., said he also would be interested in Microsoft products for storage management and security. "Anytime you've got a bundled software environment with products from the same company, generally they play well together," he said.

Prohibitive Costs

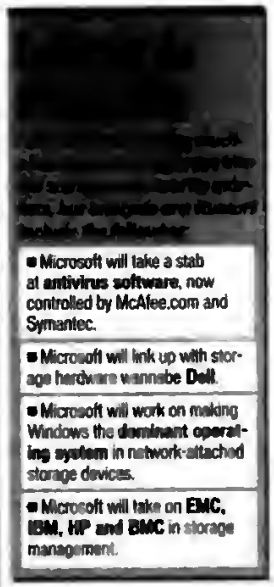
Orlow said he checked out Microsoft Operations Manager to help with volume-level storage management but found the cost — approximately $700 per processor — prohibitive for his 36 Windows servers.

A storage-area network (SAN), which would provide additional management capabilities, would also be too expensive, said Clark, so he has three staffers monitoring storage manually.

Jim Prevo, CIO at Green Mountain Coffee Roaster Inc. in Waterbury, Vt., said he carefully designed his company's storage and uses tools from Compaq Computer Corp. to monitor storage capacity in 45 Windows 2000 and NT servers. He said that he hasn't seen how enterprise storage would benefit his company but always pays attention to Microsoft's products.

Microsoft provided no details about its existing or potential offerings in the storage or security markets.

The software maker last month announced internally that Mike Nash would head its new security business unit, according to company spokesman Dan Leach. Nash is due to complete his transition from Microsoft's content development and delivery group to the security unit within the next two months, Leach said.



- Microsoft will take a stab at **antivirus software**, now controlled by McAfee.com and Symantec.
- Microsoft will link up with storage hardware wannabe **Dell**.
- Microsoft will work on making Windows the **dominant operating system** in network-attached storage devices.
- Microsoft will take on **EMC, IBM, HP and BMC** in storage management.

The first product due from Nash's division is the next version of Microsoft's Internet Security and Administration Server, an enterprise firewall and caching tool, Leach said.

Fresh off his efforts to launch Microsoft's .Net consumer services group, Senior Vice President Bob Muglia switched gears in November to head Microsoft's new enterprise storage services group, Leach said.

Muglia's group is charged with developing "a cohesive product and business strategy for the evolution of Microsoft file systems, network-attached storage, [SANs], backup, continuous availability and storage resource management," according to Microsoft's Web site.

"Storage management is a real pain point out there, and Bob is looking at what steps Microsoft can take to better explore that for customers," Leach said, noting that Muglia's group will consider both partnerships and potential technology developments.

"Beyond that, no business decisions have been made," Leach added.

Leach said Muglia will report directly to Jim Allchin, group vice president of platforms. Nash will report to Brian Valentine, vice president of the Windows division, who reports to Allchin.

Mixed Expectations for New Products

Speculation is mounting among industry observers about Microsoft's potential new storage and security offerings, but the company remains mum on the details.

Rob Enderle, an analyst at Cambridge, Mass.-based Giga Information Group Inc., said it wouldn't be unprecedented for Microsoft to create new product divisions only to later decide to partner rather than build new software itself. However, Enderle said he thinks Microsoft will move forward on storage to fill out its portfolio of server software.

"They increasingly find themselves bidding against products like IBM's WebSphere, which seem more complete because they can connect to these other offerings from IBM," Enderle said.

John Pescatore, an analyst at Stamford, Conn.-based Gartner Inc., predicted that Microsoft will make a bigger push into the consumer security sector with antivirus software or personal firewall services, rather than into the enterprise software space, which is increasingly being dominated by security appliance hardware.

"They're way too late to do anything meaningful," Pescatore said.

To date, many of Microsoft's storage offerings have been licensed from other companies, such as Mountain View, Calif.-based Veritas Software Corp., said Bill North, an analyst at Framingham, Mass.-based IDC.

Going forward, North said, he thinks Microsoft will both partner with other vendors and build its own storage software products.

Nancy Marrone, an analyst at Milford, Mass.-based Enterprise Storage Group Inc., said it's conceivable that Microsoft will have offerings in storage network management, storage resource management, data management, virtualization and storage policy management, potentially thrusting the software maker into competition against vendors such as EMC Corp., IBM, Hewlett-Packard Co. and BMC Software Inc.

"They see that something's a big market, and they're going to go take as much as they can of it," said Marrone.

– *Carol Sliwa*

CA Users, Analysts Downplay Reports of Federal Investigation Into Firm's Finances

But vendor's image problems shouldn't have effect on software customers, say analysts

BY MARC L. SONGINI

Adding to what for the past year has been a releotless series of image-related problems for Computer Associates International Inc., the federal government is reported to be investigating the software vendor's accounting procedures to determine whether it has engaged in any unlawful activity.

Several media outlets last week reported that the U.S. attorney's office for the Eastern District of New York has launched a preliminary investigation of Islandia, N.Y.-based CA's accounting practices. William Muller, executive assistant to the U.S. attorney in Brooklyn, said be couldn't confirm or deny whether an investigation is under way. However, *Computerworld* has learned that members of the attorney's office have interviewed a former CA employee, who said they were looking for possible "evidence of fraudulent deception."

CA officials said on Friday that they were aware that the company is under preliminary inquiry by the U.S. attorney's office and by the Securities and Exchange Commission but that they did not know the details of either inquiry.

"We'd like to know what's going on," said Sanjay Kumar, CA's president and CEO. "And we're eager to answer questions."

Kumar denied that CA uses deceptive accounting to boost its revenue. CA's reporting is "much more detailed than our peers in enterprise software companies," he said.

"These are very frustrating times," Kumar added. "The market is shooting first and and asking questions later."

In any case, some users and analysts said there will be little fallout for CA's customers.

"This is more an issue for Wall Street," said Jeff Adams, IT director at The Belden Brick Co. in Canton, Ohio, which uses CA's Unicenter systems management framework and Jasmine ii middleware products. "From my own perspective, I don't care about their accounting, as long as at the end of the day it doesn't collapse the company."

Although it can be a tough negotiator, CA has dealt with Belden honestly, Adams said. And since the proxy campaign to unseat the company's board of directors last summer, the CA personnel with whom he has dealt have "been much more open in their dealings and been much more straightforward."

Sherry Irwin, chairwoman of the Toronto-based Canadian Software Asset Management Users' Group, appeared unfazed by the reports.

"There has been speculation for some months now that certain of CA's accounting practices were questionable, so this investigation is no surprise," said Irwin in a written statement. "From the users' perspective, this type of scrutiny generally has a positive impact in that the vendor becomes that much more consistent in its sales and accounting practices."

"These kinds of accusations have swirled around CA for a long time," said Richard Ptak, an analyst at Hurwitz Group Inc. io Framingham, Mass. "I think CA has probably used any legal and creatively legal means available to it to present its business position in the best light possible. I do not believe any of CA's executives or employees have used any illegal means or deliberately issued false information about their business performance."

Ptak said he had spoken with several former CA employees and "none of them have offered or shown any evidence to back up these claims."

IDG News Service correspondents Laura Rohde and George A. Chidi Jr. contributed to this report.

It's Always Something

In the past years CA has suffered several blows to its image:

MAY CA had to correct a preliminary overstatement in reporting its annual earnings. The company had already started to use a new accounting model that books business as it comes in on a monthly basis rather than for the entire value of the contract upfront, provoking controversy.

JUNE Texas billionaire Sam Wyly launched an unsuccessful but highly public proxy campaign to unseat CA's board of directors.

OCTOBER The U.S. Department of Justice hit CA with an antitrust lawsuit over the firm's handling the buyout of Platinum Technology International Inc.

FEBRUARY Moody's Investors Service said it was reviewing CA for a possible credit downgrade.

U.S. Digital Goods to Face European Value-Added Tax

U.S. businesses say compliance too costly

BY PATRICK THIBODEAU
WASHINGTON

A new European Union law due to take effect next year will require U.S. companies that sell digital products to collect taxes from EU customers. It would also hold them responsible for applying a value-added tax (VAT) on every sale and then sending that tax payment across the ocean — even if the company has no European office.

"It will definitely complicate our lives," said Stephen Pendergrast, co-owner of electronic bookseller and publisher Fictionwise Inc. in Chatham, N.J. Canadian and European customers buy about 20% to 25% of the approximately 10,000 electronic books the company sells each month.

Fictionwise and other businesses that sell digital downloads such as music and software, as well as subscription-based pay-per-view televisioo and radio, will have to apply the VAT on each sale and remit the tax payment. VATs range from 15% to 25%, depending on the country.

"We're talking about thousands and thousands in costs that we would he forced to incur," said Pendergrast. That includes at least a week of programming staff time, be said.

The Bush administration opposes the VAT on digital goods. Kenneth Dam, deputy treasury secretary, said the plao puts burdens on U.S. businesses that would be "more onerous" than those on their European competitors. He specifically warned of its potential to trigger a trade war.

EU companies already collect VATs on digital goods, but they pay the taxes where they are headquartered, while non-EU businesses will do so based on where their customers live.

It's onknown how far the EU will go in enforcing the law, particularly on businesses with no physical presence in Europe.

The EU could attempt to get an Internet service provider to block a Web site or "wait for one of your company executives to take a vacation to Paris and arrest him on criminal tax-evasion charges when he gets there," said Mark Nebergall, chairman of the Internet Tax Fairness Coalition, a Washington-based group that opposes expanded tax collection obligations on e-businesses.

But businesses may feel the need to collect the tax if they want to negotiate and enforce contracts or open an office in Europe, said Karl Frieden, a partner at Chicago-based Arthur Andersen and an Internet taxation expert.

The flip side of the problem is customer compliance.

Address verification systems used in credit card purchases don't necessarily work in Europe. Also, customers can list home countries where the VAT doesn't apply, said Pendergrast. "There are so many ways for the user to subvert [paying] the tax," he said.

The looming European tax collection requirement is alien to anything that U.S. law requires. U.S. companies are required to collect sales taxes only in states where they have a physical presence, although some states are pushing Congress to change that.

What's Going On

July 2003
U.S. businesses selling digital goods in Europe will have to collect a VAT.

Threshold
The law applies only to businesses that sell more than 100,000 euros or $90,000 worth of digital goods annually.

U.S. Position
The law puts U.S. firms at a competitive disadvantage. In particular, U.S. companies must verify customer locations. EU-based firms collect a VAT based on their own locations; U.S. companies would collect based on customers' locations.

Outlook
The U.S. says the issue could trigger a trade war.

Energy Firms Move to Thwart Cyberattacks

Industry Information-Sharing and Analysis Center prepares for widespread initiative

BY MICHAEL MEEHAN

ENERGY INDUSTRY giants are preparing to make a major push into the information-sharing arena, hoping that a sophisticated alert system will protect the nation's critical fuel infrastructure from physical assaults and cyberattacks.

Following a model used in the financial services and high-tech industries, oil and gas companies have formed the Energy Information Sharing and Analysis Center (ISAC). The center began operating in November among founding members, including Conoco Inc., Duke Energy Corp., ChevronTexaco Corp. and BP PLC. The group intends to push the center as an industry-standard defense mechanism.

"Maintaining the integrity of those [IT] systems has become an increasing concern in our industry," said Bobby Gillam, manager for global security at Houston-based Conoco. "We have to make sure that our critical infrastructure is protected from both cyber and physical threats."

Daily Threats

Sarah Jensen, manager of enterprise IT security at Charlotte, N.C.-based Duke Energy, said that each day, her division tackles threats caused by faulty technology or inadvertently exposed applications, creating the need for round-the-clock vigilance.

"I'd like to grow the ISAC so it makes my job easier," Jensen said. "My goal is to create one-stop shopping. Right now, I've got my staff checking all these different agency and vendors' sites looking for information."

Predictive Systems Inc. in New York has been tapped to run the ISAC on a Unix server farm in Reston, Va.

Anish Bhimani, chief technology officer at Predictive Systems, said that previous ISACs the company has run on behalf of the financial services industry and foreign countries have allowed users to post anonymous information and receive classified alerts.

Alerts can be labeled "normal," "urgent" or "crisis-level." Bhimani said a tip received two weeks ago gave ISAC members a head start on tackling flawed Simple Network Management Protocol (SNMP) installations. Last week, *Computerworld* reported on a warning that hundreds of hardware and software products with built-in support for SNMP are vulnerable to attack [Page One, Feb. 18].

"Every hour counts in these situations," said Bhimani.

While ISACs do a good job of disseminating alerts from government agencies, energy firms will need to rethink how their IT infrastructures push information out to the rest of the industry, said Gillam.

Mark Evans, CIO at San Antonio-based oil refiner Tesoro Petroleum Inc., noted that it's difficult to draw information from the Supervisory Control and Data Acquisition systems that run the operations of most oil and gas companies.

"For a long time, we've been unable to share that information within our own company," Evans said. "That's really the first step."

Gillam said companies will likely be reluctant to share incident information with federal authorities unless the government can ensure the privacy of that information.

Bhimani said real-time IT capabilities — as well as confidence that shared information can be kept confidential — will be critical.

"Right now, we get a lot of 'Here's what happened, and here's what we did about it' submissions, as opposed to, 'Something just happened — everybody duck' warnings," he said. "To get to that next step, it's going to require some physical and cultural changes in the industry."

Founding members of ISAC also plan to establish an IT best-practices list so that users will be able to turn the information into action.

Critical Protection

A National Petroleum Council report last year found weaknesses in the IT infrastructure for oil and gas companies, including immature response and recovery capabilities and a lack of a real-time alert system. Here are some of its recommendations:

- Each company should conduct regular vulnerability assessments of its own systems and those of its partners.
- The industry and government should advocate the development, adoption and implementation of global IT management processes, based on the International Standards Organization model.
- Companies need to enhance response and recovery plans with an eye toward regional planning and infrastructure interdependence.
- An oil and gas industry ISAC should be formed to provide alerts to all member companies.

U.S. Firms Look North for Outsourcing Help

Currency exchange rate, proximity and similar culture make Canada viable choice

BY JAIKUMAR VIJAYAN

So-called nearshore outsourcing services delivered from Canada have become an alternative to traditional offshore arrangements for some U.S. companies that are looking to cut their IT costs.

The cheaper dollar and lower labor costs in Canada, as well as the geographic proximity and cultural similarities between that country and the U.S., are big draws for companies such as Worcester, Mass.-based Allmerica Financial Corp.

Allmerica outsourced application development and maintenance for two of its business units to Keane Inc. in a deal signed in late 2000 and expanded last month. While cutting costs wasn't a fundamental driver of the outsourcing decision, the move has resulted in a 20% savings in software-related expenses, said Allmerica CIO Greg Tranter.

Much of that savings was derived from Bostoo-based Keane's use of its facility in Halifax, Nova Scotia, to deliver services to Allmerica, Tranter said. Allmerica also considered using offshore firms, but the company decided that it could get some of the same efficiencies taking the nearshore approach, without having to deal with as many cultural differences and travel issues, Tranter explained.

"We just feel a lot more comfortable with this," he said.

IT services firms working from Canada are typically able to shave 15% to 25% off the costs of doing the same work in the U.S because of the currency exchange rate, said Michael Filak, a senior vice president at Montreal-based outsourcing vendor CGI Group Inc.

Last October, for instance, CGI finalized a 10-year, $380 million outsourcing contract with Novata, Calif.-based Fireman's Fund Insurance Co. A big part of the contract involves CGI taking over management of the insurance company's mainframe data center in Phoenix. But as part of the deal, a CGI facility in Canada will also provide 24-hour support services for more than 11,000 PCs, laptops and printers used by Fireman's Fund.

Going forward, applications such as e-mail and general ledger functions would be candidates for similar outsourcing arrangements, said Fireman's Fund CIO Billy McCarter.

"So far, the transition to CGI has worked very well," McCarter said, adding that the deal should lower the insurer's overall IT infrastructure costs by about 21%.

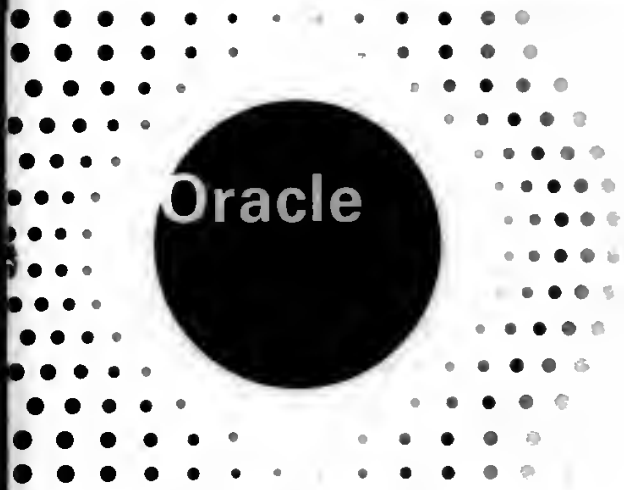
Bruce Caldwell, an analyst at San Jose-based Dataquest Inc., said that outsourcing work to Canadian services firms can be especially attractive on projects that require a high degree of interaction between U.S-based IT staffs and external programming and development teams.

AT A GLANCE

IT Migration

Outsourcing to Canada can offer the following benefits:

- The work can be done more cheaply than in the U.S.
- Travel and communication costs are lower than they would be in more distant countries.
- There are fewer cultural differences to deal with among workers.
- There are no major time zone differences that can disrupt interaction.



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BRIEFS

Two Intel Executives To Share IT Duties

Intel Corp. named Douglas Busch and Sandra Morris as co-CIOs. Busch, 48, was director of IT at Intel, and Morris, 47, was in charge of the chip maker's business-to-business projects. Intel had never formally filled the CIO position. Falls Church, Va.-based Capital One Financial Corp. dropped a co-CIO arrangement last fall, but several other companies retain such setups.

Prof Named to Inspect Windows Source Code

U.S. District Court Judge Colleen Kollar-Kotelly appointed University of Utah computer science professor Lee Hollaar to inspect Microsoft Corp.'s Windows source code for the nine antitrust holdout states and the District of Columbia. The group hopes the review will show that Microsoft can release a version of Windows without its applications. Microsoft says that can't be done.

IBM, VMware Team On Server Tools

IBM said it plans to work with Palo Alto, Calif.-based VMware Inc. to develop dynamic logical partitioning capabilities for some of its Intel-based multiprocessor servers. The technology is intended to let users configure IBM's xSeries 360 servers as up to 20 separate virtual machines, IBM said. Shipments of the virtualization tools are expected to start in the third quarter.

Short Takes

SUN MICROSYSTEMS INC. next month plans to ship an upgrade of its iPlanet Application Server software with a set of prebuilt Java components for basic data processing tasks. . . . Denver-based software vendor J.D. EDWARDS & CO. reported a $4.1 million loss on revenue of $200.6 million for its first quarter ended Jan. 31.

IBM Puts Mainframe Tools in Smaller Box

New entry-level zSeries system includes technology from higher-end machines

BY JAIKUMAR VIJAYAN

Users hungry for mainframe power but unwilling to shell out the big bucks for it may have a new option in the eServer zSeries 800 line that IBM announced last week.

With prices starting at less than $400,000, an entry-level zSeries 800 mainframe costs just one-third the price of an entry-level 64-bit zSeries 900 system while offering much of the same functionality, according to IBM.

The new system is available in eight models, including a Linux-only machine. IBM plans to market it for use in consolidating applications on a single system and for running a range of e-commerce applications.

IBM last week also introduced z/OS.e, a specially priced version of its 64-bit z/OS mainframe operating system. IBM will offer discounts on the software as an incentive for users who run new databases and applications on zSeries 800s.

"The zSeries 800 shows IBM's commitment to provide z-architecture [products] to a very broad range of customers and applications," said Dan Kaberon, Parallel Sysplex manager at Hewitt Associates LLC, a Lincolnshire, Ill.-based human resources outsourcer.

Low-Cost Upgrade

The zSeries 800 gives current mainframe users a relatively low-cost way to upgrade to IBM's 64-bit zSeries architecture, Kaberon said. And the zSeries 800's load-balancing and partitioning technologies make it a good application-consolidation platform for first-time mainframe users, he said.

This isn't IBM's first attempt to lure new users to mainframe technology with low-price models. The company's Multiprise systems are also low-cost mainframes that IBM has been trying to pitch for the past few years at new users, but without much success, according to analysts.

The difference with the zSeries 800 is that this is the first low-price model to feature the same technologies that are available in the more expensive z900 boxes, said Rich Lechner, an IBM vice president. "This is a full-fledged mainframe in all regards," he said.

ZSeries 800 systems can support up to four processors and a range of operating systems, including z/OS, OS/390, Linux, VM/ESA and VSE/ESA. The systems ship with 8GB of memory and support IBM's HiperSocket technology for high-speed communications between partitions in a server.

The system may appeal both to new users and to existing mainframe users who are hungry for new capacity but don't want to invest in a 16-way zSeries 900 system, said David Mastrobattista, an analyst at Cambridge, Mass.-based Giga Information Group Inc. "The zSeries 800 gives users the latest mainframe technology at very low cost," he said.

The system's ability to run a mix of operating systems as well as traditional and new workloads makes it a scalable and flexible alternative to high-end Unix servers from companies such as Sun Microsystems Inc., said Mike Kahn, an analyst at The Clipper Group Inc. in Wellesley, Mass.

In another first, IBM said it will sell a majority of the new systems via resellers, who will also support and service the machines. Most of IBM's high-end mainframes are sold directly. IBM said it expects resellers to ship more than 80% of the zSeries 800 systems.

- Supports up to four processors
- Can operate independently or as part of a Parallel Sysplex cluster of servers
- Supports z/OS, z/OS.e, z/VM, OS/390, VM/ESA, VSE/ESA, Linux for zSeries and Linux for S/390 operating systems
- Supports up to 32GB of central memory, with 8GB standard.
- Supports HiperSocket technology for high-speed communications between partitions

SOURCE: IBM

HP Aims Midrange Servers At Application Consolidation

BY JAIKUMAR VIJAYAN

Hewlett-Packard Co. is shoring up its midrange Unix server family with a new eight-way system featuring technologies migrated from its high-end Superdome server.

The HP rp7410 system being introduced this week is positioned as a server consolidation system and as an engine for running e-commerce, service provider, business intelligence and enterprise resource planning applications.

The server is based on HP's PA 8700 processor and features the same high-performance crossbar switching and cell-based architecture found in the Superdome system.

Though the rp7410 is much smaller than the Superdome, it performs about 100,000 transactions per minute, which makes it a powerful box in most situations, said Jonathan Eunice, an analyst at Nashua, N.H.-based Illuminata Inc.

"It's midrange only in comparison [to the Superdome]. . . . This would have been a pretty fabulous high-end box a few years ago," he said.

A key feature of the rp7410 is its support for a range of high-availability technologies, said Mark Hudson, an HP vice president.

For instance, technologies such as self-healing caches, clustering and processor failover allow the server to continue operating through major failures and system errors, Hudson said.

With the rp7410, HP is also introducing dynamic virtual partitioning and hard partitioning capabilities in its midrange lineup. Initially, only hard partitions will be supported, but later this year, HP plans to introduce support for virtual partitions that allow users to run up to eight separate applications, each with its own copy of the operating system, in the same box.

Such capabilities are crucial for users looking to consolidate multiple applications on large servers, said Sarang Ghatpande, an analyst at D.H. Brown Associates Inc. in Port Chester, N.Y.

An entry-level rp7410 system with two processors and 2GB of memory costs $69,000.

AT A GLANCE

HP rp7410 Features

- Up to eight PA 8700 CPUs at 650 MHz and 750 MHz
- Up to 64GB memory (later this year)
- Up to two hard partitions
- Up to eight virtual partitions (available later this year)

THE COMPAQ ADAPTIVE INFRASTRUCTURE IS ABOUT TO CHANGE EVERYTHING.

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COMPAQ

ICANN Panel Weighs DNS Vulnerabilities

Head of new security committee says lower-level servers need more protection

BY PATRICK THIBODEAU

The Internet Software Consortium's Berkeley Internet Name Domain (BIND) server software is the predominant system for running the Domain Name System (DNS). The Internet Corporation for Assigned Names and Numbers (ICANN), the nonprofit group responsible for the stability of the Internet, recently formed a security committee aimed, in part, at examining DNS security holes, including BIND vulnerabilities.

Stephen Crocker, who helped develop protocols for Arpanet, this month was named to lead the new committee. He spoke with *Computerworld* last week about some of the issues his committee is facing.

ICANN is responsible for ensuring the stability of the DNS. From a security perspective, what does that entail? One area is to work closely with [interested] parties to set the rules and procedures to ensure operations are smooth, reliable and resistant to being penetrated. There are also the root servers — the top-level machines that point to the .com, .biz, .org, and .net machines. There are 13 of these root servers around the world, and they are somewhat independent. It's not terribly important who is in charge so much as whether or not everybody has the same shared picture of what to do.

BIND was recently cited by the CERT Coordination Center as its top vulnerability concern. How susceptible is BIND to attack, and what can be done about it? Actually, not all of the servers are running BIND these days. Some diversity has developed, and I expect this trend will continue. That's the good news. The bad news is that older versions of BIND are still in use. This is not generally true at the servers for the root-level or the top-level domains, but it is a problem at many of the lower-level servers. In general, the root servers and the top-level domain servers are generally more secure than many of the lower-level servers.

There has also been in preparation for several years the DNS Security Protocol [a standard using public keys], but it is not yet deployed. There are questions about how soon it can be deployed.

CROCKER: Setting DNS operating rules a priority.

How vulnerable is DNS? I don't know yet. I do know if you were to take down all the root servers and ask the question, "How much damage would there be and how soon?" the answer [would be] that the impact would only be incremental for a couple of days before real trouble set in.

When you type in a name — *www.icann.org*, for instance — it has to be translated to an IP numeric address. Your machine has the address of the local domain name server, usually run by your ISP. If it doesn't know what that translation is, then it passes it up the line. If it's a top-level domain that it's never seen, then it would go up to a root server. You can think of a root server as machine whose name is simply "." [dot]. The root servers have pointers to all of the top-level domains — .com, .us, .uk. If you took out even all of the root servers, what would happen is that brand-new attempts to resolve a name would be unanswered. But there are copies of the primary information cached in many places, and the information is updated every couple of days before it's refreshed.

So if you had a disruption in connectivity, everything would still go along, but the updates would be disrupted. ◗

WellPoint Workers Manage Own Passwords

Automated system cuts help desk costs at health care firm

BY DAN VERTON

WellPoint Healthcare Networks Inc., one of the largest publicly traded health care companies in the U.S., this week will announce a deal with Courion Corp. to help put password management and identity authentication back in the hands of its 16,000 users.

WellPoint, formerly Blue Cross of California, is using Framingham, Mass.-based Courioo's PasswordCourier and ProfileCourier software to reduce help desk costs associated with managing passwords and to improve security by automating password policy enforcement.

The Courion tools were deployed last month on WellPoint's network.

Passwords are the main vehicle for WellPoiot's 16,000 employees to gain access to the corporate network. However, recent mergers and acquisitions, as well as a move last December from a mainframe environment to a client/server network, made password management a nightmare for employees who needed to synchrooize access across multiple systems, said Tom Kiger, a data security engineer at Thousand Oaks, Calif.-based WellPoint.

"We needed a way to get them back online quicker so that they could focus on their jobs," said Kiger, adding that the company's workers are spread across 80 offices that use seven different operating systems. The use of Courion's technology offers WellPoint what Kiger called a "self-service process" that didn't force the company to lock itself into a proprietary framework.

Users access PasswordCourier through a Web browser or the Windows NT log-in prompt or via automated telephone response. The software prompts users for specific answers to secret questions that they establish and links to an encrypted database where the authentication information is stored.

WellPoint outsources its help desk functions to Verizon Communications, and the last thing it wants is to pay Bedminster, N.J.-based Verizon for each and every request made by an employee to have his password reset, said Kiger.

"[Verizon has] a lot of responsibilities outside of resetting passwords, such as supporting our daily telecommunications oeeds," he said.

A typical help desk request can cost anywhere from $25 to $35, claimed Tom Rose, a vice president at Courion. "The help desk employee has to challenge you to confirm your identity, log the call into the help desk system, manage audit logs and then has to go out across multiple platforms to change the password," he said.

Nancy Alter, director of IT customer support at Penn Mutual Life Insurance Co. in Horsham, Pa., said her company has been using PasswordCourier for the past three years. The software has allowed Penn Mutual's information security specialists to concentrate on strategic projects instead of the 145 to 200 requests for password resets that the company had been dealing with every month, said Alter.

"They're not in the on-demand production mode that a help desk is in, so it would take 15 to 20 minutes, and that's lost productivity," she said.

Penn Mutual plans to move to a self-service model sometime next year, Alter said. So far, the company has saved approximately $17,000 to $20,000 per year using the Courion software, she said.

Pete Lindstrom, an analyst at Hurwitz Group Inc. in Framingham, Mass., said the decision to automate the password reset process should he "a slam-dunk for any enterprise." ◗

PASSWORDCOURIER
Interoperability
IBM OS/390
Windows NT
Windows 2000
HP-UX
IBM AIX
Sun Solaris
Novell NetWare NDS, NetWare Bindery
OTHER USERS: The Boeing Co., Dell Computer Corp., Exxon Mobil Corp., Fannie Mae, Kaiser Permanente, Lockheed Martin Corp., SunTrust Banks Inc., Target Corp. and the U.S. Bureau of the Census

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PASSWORDCOURIER

Interoperability

- IBM OS/390
- Windows NT
- Windows 2000
- HP-UX
- IBM AIX
- Sun Solaris
- Novell NetWare NDS, NetWare Bindery

OTHER USERS: The Boeing Co., Dell Computer Corp., Exxon Mobil Corp., Fannie Mae, Kaiser Permanente, Lockheed Martin Corp., SunTrust Banks Inc., Target Corp. and the U.S. Bureau of the Census

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Quick!

VERITAS

Storage, Server Chargeback Software Gains Popularity

Companies look to charge departments for disk space, say ROI makes it worthwhile

BY LUCAS MEARIAN

As the economy continues to force IT shops to tighten their belts, some firms are turning to server and storage monitoring software to restrict the amount of space used by business units and to charge those departments for their use of IT and data resources.

Stamford, Conn.-based Gartner Inc. estimates that for every dollar spent on disk storage, it actually costs $7 more to manage that data. Because of the high cost of data management, companies are looking to software to help them better control business units' use of IT resources, said Gartner analyst David Furlonger.

With more than 25,000 employees, UPMC Health Systems in Pittsburgh was concerned about network storage capacity being overtaken by personal data — more than 1.8TB worth.

The additional management required for routine data backups and restores — as well as ongoing monitoring and maintenance — placed a burden on UPMC's IT shop and cost extra in man-hours.

On top of that, UPMC migrated from Novell Inc. NetWare to a Microsoft Corp. Windows NT server environment about seven years ago, which removed its ability to manage disk space allocation for users, said Karen Malik, manager of network servers and desktop design at UPMC, the largest nonprofit integrated health care system in the country.

Now UPMC is considering a chargeback tool that comes with the latest version of a software package it installed two years ago.

"It would be a huge process for us to implement that, but it would likely be worth it because of the return on investment," which Malik said she has yet to calculate.

Malik oversees a shop that maintains more than 325 Windows 2000 and NT servers. She also manages developers who set up desktop standards and create and deploy standard desktop operating systems and software packages.

Malik said one of the biggest problems she has run into with UPMC's environment is the extent to which users eat up entire disks to store personal data, forcing her and her team to constantly ask people to delete files. And because the company doesn't currently have a chargeback method, UPMC's IT shop "financially supports all server hardware, and we can't afford not to control the disk usage," she said.

In addition, Malik said, notifying users that they needed to delete files was an arduous task that often left IT at critical levels of disk space.

"First you have to do the reporting on who's using all your space and contact them and justify your case," she said.

In 1997, UPMC installed its first server and storage monitoring utility, called Quota Server, from Northern Parklife Inc. in Tampa, Fla. UPMC originally purchased 12 licenses at $895 per server. The company has since updated the software three times.

The tools allow systems administrators to set storage quotas and notify and lock users out of directories when they have reached preset limits.

Malik said the chargeback feature that Northern Parklife will offer in its next version of Quota Server, which is due out next month, is appealing.

"We would be able to make individual departments pay for disk space they use. That way, we could use the money to purchase additional disk space," Malik said.

Payback Time

Northern Parklife's Quota Server, a server/storage monitoring utility, helps UPMC Health Systems do the following:

- Restrict unwanted file types from being stored on a server.
- Allow system administrators to set storage quotas on disk objects.
- Notify users when they reach 100% disk capacity.
- Provide e-mail notifications to users reaching storage thresholds, thus reducing calls to the help desk.
- Generate trend-analysis statistical reports for administrators.

Microsoft Opens Source Code to Integrators

Says antitrust case didn't lead to move

BY CAROL SLIWA

Microsoft Corp. last week announced that its Windows source-code sharing initiative is being extended to some 150 systems integrators in more than 30 countries.

A Microsoft spokesman said feedback from corporate users factored into the company's decision to expand the program to Gold Support Services Certified Partners, or systems integrators, with more than 1,500 seats of Windows and Level A or Level B premier support agreements.

The spokesman claimed that the source-code expansion has no relation to ongoing antitrust litigation. Last week, the federal judge overseeing the antitrust case against Microsoft ordered the company to open its source code for recent versions of Windows to the nine states that are plaintiffs in the case. "We've been working on this for quite some time. It does signal our commitment to sharing even more technical information about Windows," the Microsoft spokesman said.

AT A GLANCE

Source Access

Microsoft has made its Windows source code available to the following audiences:

- Enterprise customers with at least 1,500 Windows seats
- Universities
- Government users
- Original equipment manufacturers
- Systems integrators

But John McCarthy, an analyst at Forrester Research Inc. in Cambridge, Mass., claimed that Microsoft isn't only "trying to make nice from an antitrust perspective," but it's also seeking to blunt the force of open-source Linux.

Among the many developers to whom Microsoft opened its Shared Source Initiative last year were about 1,700 worldwide enterprise customers, each of whom had more than 1,500 seats of Windows covered by enterprise or upgrade advantage agreements.

The Enterprise Source Licensing Program permits enterprise users to access Windows source code to develop and debug internal applications, as long as they don't modify the source code.

A Microsoft spokesman said that approximately 50 enterprise customers are using the source code. But the prevalent reaction was " 'Gosh, we don't want to spend our IT time digging into Microsoft source code, but it would be beneficial if our systems integrators could,' " he said.

Frank Orlow, manager of technical services at Clark Retail Enterprises Inc. in Oak Brook, Ill., said it's not a priority for his firm.

One reason that "nobody has the inclination" to access Microsoft's source code is that the software maker has been "sheltering [itself] for so many years," said Tom Pane, vice president of technology at New York-based Ann Taylor Stores Corp.

"Would we like sometimes to have the source code to look at it? Yeah, but it would be like once every three months," Pane said. "We buy packages targeted for the NT environment. I like to know that my vendor has access to that code. It isn't the old days where we have systems programmers, and we tell IBM where they made a mistake. Those days are gone."

According to Microsoft, systems integrators last year responded to about 1 million customer support calls from Windows users in the U.S. Microsoft claims the extension of its source-code program will help systems integrators more rapidly troubleshoot customer issues, fine-tune Windows-based custom applications and deliver security analysis and privacy verification.

IDG News Service correspondent George A. Chidi Jr. contributed to this report.

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BRIEFS

Microsoft Releases Its First SNMP Patch

Microsoft Corp. issued a patch for Windows 2000 and Windows XP to plug security vulnerabilities that could affect users of Simple Network Management Protocol (SNMP) services. The flaws exist in products from numerous vendors and were disclosed two weeks ago by security researchers. Users of other Windows releases should disable SNMP until patches for those operating systems are ready, Microsoft said.

Security Groups Offer Cisco Testing Tool

Two security research organizations and the National Security Agency announced a free software tool for use in testing and configuring routers made by Cisco Systems Inc. The tool and a supporting set of benchmark guidelines are aimed at helping IT managers better secure Cisco-based networks. Cisco said it evaluated early versions of the software and sees it as a useful tool.

Survey Shows Doubts About Personal Data

A survey of 1,529 U.S. residents conducted by Rochester, N.Y.-based Harris Interactive Inc. found that 57% don't think companies handle the personal data they collect "in a proper and confidential way." In addition, 63% of the respondents said existing data privacy laws and practices don't provide a reasonable level of protection to consumers.

Short Takes

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Continued from page 1

Privacy

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"The issue still remains that you want to have clear notice of what information is being collected and how it's being used. There are still areas of privacy that remain sacrosanct," such as personal financial data and health care information, said Whitener. "Companies have to consider the regulatory environment and make sure they don't lose sight of that," she noted.

Don't Disclose

More important, companies that are deploying employee monitoring and authentication systems that collect and store personal data need to do so with an eye toward protecting that information from unauthorized disclosure, said John Spotila, president of GTSI Corp., a systems reseller in Chantilly, Va., and former administrator of the Office of Information and Regulatory Affairs during the Clinton administration.

"Many of the potential problems arise because people don't think through all of the implications of what they are doing," said Spotila. For example, when a company collects biometric information and stores it in a database, that company accepts an implied responsibility to limit access to that information. While there are no legal constraints on how much information companies can collect or what they can monitor, "it's certainly possible to take on liability" if that information is compromised, Spotila said.

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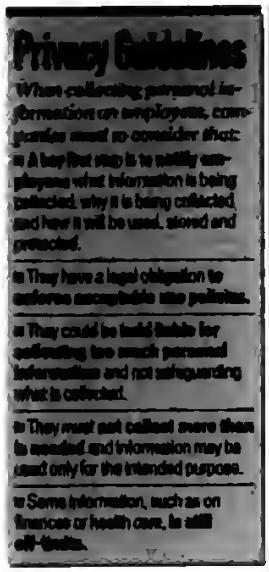
Privacy Guidelines
When collecting personal information on employees, companies must re-consider that:
■ A key first step is to notify employees what information is being collected, why it is being collected, and how it will be used, stored and protected.
■ They have a legal obligation to enforce acceptable use policies.
■ They could be held liable for collecting too much personal information and not safeguarding what is collected.
■ They must not collect more than is needed and information may be used only for the intended purpose.
■ Some information, such as on finances or health care, is still off-limits.

The issue of privacy "boils down to what data is collected and how it's used," said Richard Jones, vice president of technology at CommerceHub, an online hub for business trading partners based in Clifton, N.J. "Having an iris scan or palm print of someone is no more an abrogation of privacy than having a fingerprint — and for that, privacy standards and protocols have long been established."

In any case, it's clear that many IT shops have yet to address the issue.

An IT manager at a major financial institution, who spoke on condition of anonymity, said he is unaware of any new projects since Sept. 11 that are specifically related to privacy. He did say that the privacy challenge is an internal one.

There's really "no way to completely protect the company's data from employees with authorized access," the IT manager said. "We can't stop different groups from looking at the data they need to do their jobs, but we try very hard to prevent them from updating the data without an audit trail."

Post-Sept. 11 Security Measures Raise Privacy Concerns

Unprecedented security measures put in place in the aftermath of the Sept. 11 terrorist attacks on the U.S. have some civil libertarians worried that the tenuous balance between the need for public protection and the right to privacy may be shifting rapidly in the wrong direction.

They cite plenty of examples:

- A public video-monitoring system has been deployed in Washington.
- Multiple proposals have been put forward to track and store photos and biometric and profiling data belonging to millions of air travelers and visitors to public buildings.
- Some states are pushing to convert driver's licenses into national identification cards.
- Congress has granted federal law enforcement agencies sweeping new powers to monitor the Internet and other forms of electronic communications.

"There is a long history of data being used for purposes other than for which it was collected, and the potential for abuse here is enormous," said Steven Kobrin, a professor and privacy expert at The Wharton School of the University of Pennsylvania in Philadelphia. "The odds that our privacy is being invaded by the government have certainly gone up, and the odds that we will ever know about it have gone down."

The Electronic Privacy Information Center in Washington has also weighed in on several occasions, most recently to protest the video monitoring of visitors to the nation's capitol. The watchdog organization called that effort an attempt to turn Washington into "the crucible for high-tech surveillance."

But some experts have taken the opposite view, arguing that the increase in IT-based surveillance and other security measures actually helps to protect privacy.

"The measures that we are imposing are fundamental privacy protections," said Allan Raul, former White House counsel under the Reagan and Bush administrations and a partner in the Washington office of international law firm Sidley Austin Brown & Wood.

"The fundamental threat to our privacy is when terrorists and criminals are able to intrude on the privacy and sanctity of our families and lives," he said. "Safety is a privacy value."

The balance between privacy and security "is always about trade-offs," said Kathleen Wallman, former White House associate counsel and Federal Communications Commission bureau chief who now runs Wallman Strategic Consulting LLC in Washington.

"A year ago, the big debate was in the commercial sector," she said, referring to the issues surrounding online consumer privacy. "Now that's taken a back seat."

However, she noted that people will put up with those measures only until they are "no longer transparent or when a mistake occurs."

Raul agreed that data must be protected from inadvertent disclosure. However, "people [in general] tend to be more realistic and practical than a lot of the civil libertarians are," he said.

– *Dan Verton*

BRIEFS

Microsoft Releases Its First SNMP Patch

Microsoft Corp. issued a patch for Windows 2000 and Windows XP to plug security vulnerabilities that could affect users of Simple Network Management Protocol (SNMP) services. The flaws exist in products from numerous vendors and were disclosed two weeks ago by security researchers. Users of other Windows releases should disable SNMP until patches for those operating systems are ready, Microsoft said.

Security Groups Offer Cisco Testing Tool

Two security research organizations and the National Security Agency announced a free software tool for use in testing and configuring routers made by Cisco Systems Inc. The tool and a supporting set of benchmark guidelines are aimed at helping IT managers better secure Cisco-based networks. Cisco said it evaluated early versions of the software and sees it as a useful tool.

Survey Shows Doubts About Personal Data

A survey of 1,529 U.S. residents conducted by Rochester, N.Y.-based Harris Interactive Inc. found that 57% don't think companies handle the personal data they collect "in a proper and confidential way." In addition, 63% of the respondents said existing data privacy laws and practices don't provide a reasonable level of protection to consumers.

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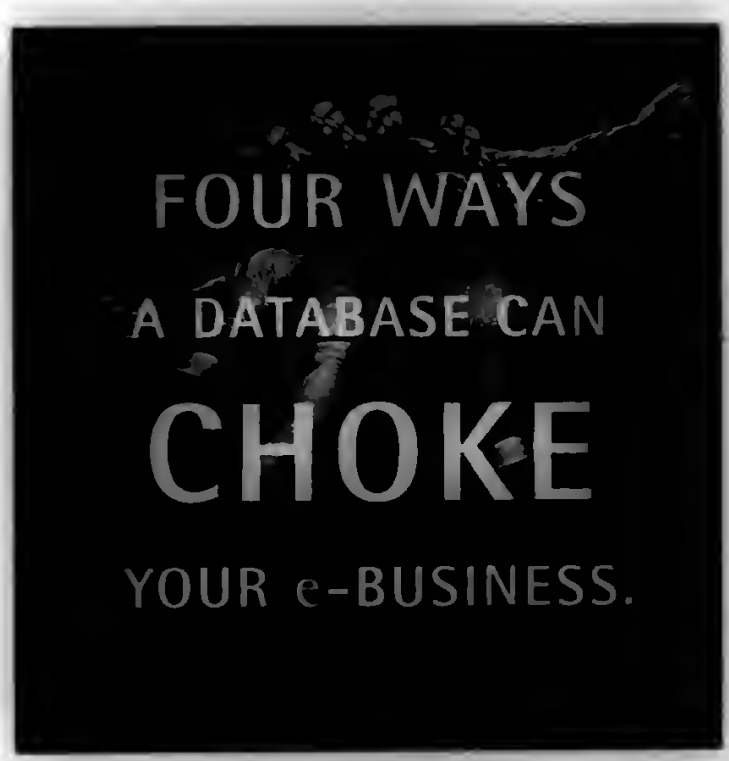
THE STRAIGHT GOODS ON DATABASES.

FOUR WAYS A DATABASE CAN CHOKE YOUR e-BUSINESS.



DOWNTIME TIES YOU UP.

If your e-Business is constantly online, how do you handle routine DBMS chores like maintenance?

How do you add new components and resources without disrupting your current customer transactions?

Fortunately, Sybase ASE (Adaptive Server Enterprise) 12.5 answers these questions.

ASE lets you perform routine maintenance operations and even change configuration parameters while the database is online.

You can transfer users from your primary system to your backup system without missing a beat. Even if they're in the middle of a transaction. Your employees won't even know it's happening. And neither will your customers.

In case of emergency, ASE's proven cluster architecture provides fail-over to a backup server without losing any non-committed data or severing a single user connection. Bottom line: ASE delivers continuous availability to everyone who needs it, whenever and wherever they need it.

INSECURITIES BRING YOU DOWN.

ASE responds directly to your security challenges with more security features than a Secret Service detail. Including, but not limited to: protection from wiretaps, accidental disclosure and prying from thieves and vandals. Sybase ASE provides a row-level security mechanism that allows you to define how your database is accessed. It's a feature you'll find missing in most competitive products. There's also link encryption using SSL and PKI certificates. So your business is safe for business.

XML MEETS A DEAD-END.

Sybase ASE makes XML rock in ways other databases simply don't. Sybase ASE has a complete XML framework for storing, managing and retrieving XML directly to and from the database.

Data stored in the database can be retrieved as XML, allowing for easy integration of your existing information with your new Web applications.

A general XML-Query facility (XQL) allows you to easily query XML data whether it's stored in the DBMS, a flat file or even a URL. Bottom line: faster development times, faster access to the information you need.

HIDDEN COSTS BITE.

Sybase ASE puts the bite on hidden costs.

It reduces costs by the very nature of its 24x7 design. It ensures that your business never goes down. It delivers fast backup and recovery. It utilizes hardware resources efficiently. But even before you get to all of that, it saves you time and money in the traditionally costly development process.

If e-Business is going to be a critical part of your success this year, ASE has a critical role to play.

To find out more about how Sybase ASE can help you deploy and manage a successful e-Business, visit www.sybase.com/breathe or call 1-800-8-SYBASE.

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Collaboration—it all begins with a shared vision

In times like these, you can't afford to partner with someone who's single-minded. There must be a shared vision and shared ideas right from the start. It's our unique approach to consulting and services. The method of constant dialogue and complementary skills interacting to create better solutions. Through collaboration, we can accomplish anything.

It's an approach that further benefits from the expertise and resources of the entire Fujitsu group, which has long provided world-class technology and platform products all over the globe. The result? Business solutions that many may promise but few can deliver.

Unique ROI-focused methodology

With a global economy and fierce competition pressuring their bottom line, most companies today need a partner who can meet their business challenges by delivering a rapid and measurable return on their IT investment.

Knowing this, Fujitsu has been building a results-focused, global consulting organization to be known, starting in April, as Fujitsu Consulting. This new organization—comprising what is currently DMR Consulting, Fujitsu Systems Business of America and other businesses within Fujitsu—utilizes a unique, proven methodology that delivers tangible business results to clients. It starts by focusing on the results the client expects to achieve. It then provides a road map through the design, implementation and operation of the solution to achieve the desired results.

Industry and business-process knowledge

Fujitsu Consulting creates tailored solutions for a variety of industries—in particular, telecommunications, financial services, and government. Whether it's core back office, front office or extended functions, we enable companies to better serve their customers and collaborate with their extended supply chain of employees, vendors and partners.

Fujitsu—a different way of working

At Fujitsu Consulting, we live and breathe three simple but revolutionary ideas: deep collaboration with our clients, an eye-to-eye approach, and a passion for getting the job done. It is the unique combination of global scope and human scale that sets us distinctly apart from our competitors and makes us so attractive to our clients.

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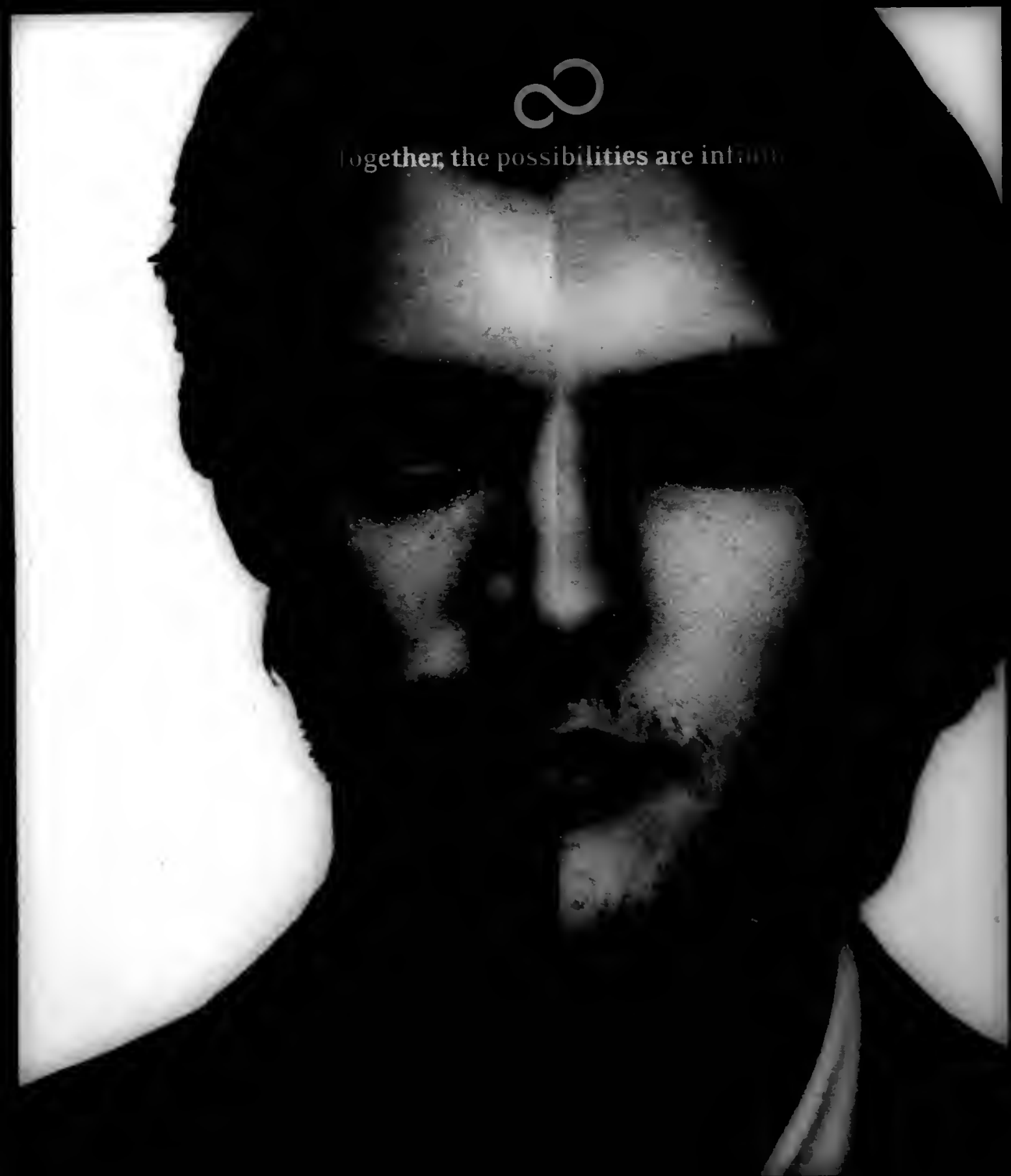

Together, the possibilities are

BRIEFS

Software Vendor Be Inc. Sues Microsoft

Be Inc., which sold most of its operating system assets to Santa Clara, Calif.-based Palm Inc. last year, filed an antitrust suit against Microsoft Corp. in U.S. District Court in San Francisco. Menlo Park, Calif.-based Be is claiming that Microsoft illegally blocked its attempts to compete against Windows in the PC operating system market. Microsoft rejected the charges.

NTT Plans Deeper Cutbacks at Verio

Tokyo-based NTT Communications Corp. said it plans to expand cutbacks being made at Verio Inc., its Englewood, Colo.-based Web hosting unit. Verio's workforce, which was already reduced from about 3,250 employees to 2,800, will now be lowered to between 1,700 and 1,800 people. NTT said it will cut the number of Verio's data centers to 10, from a high of 46 last fall.

C&W Forecasts 10% Decline in Revenue

London-based Cable & Wireless PLC warned that it expects total revenue for its fiscal year ending March 31 to be down 10% on a year-to-year basis. Cable & Wireless, which bought most of the Web hosting assets of Santa Clara, Calif.-based Exodus Communications Inc. earlier this month, blamed the expected drop on decreased demand for its fiber-optic networks.

Short Takes

SPRINT CORP. said it will cut 9% of the workforce at its Kansas City, Mo.-based wireless unit, SPRINT PCS GROUP, and close five customer service call centers. . . . Linthicum, Md.-based optical networking vendor CIENA CORP. reported a $70.6 million first-quarter loss and warned that sales will likely be well below plan this quarter.

Baan Plans New IT Services Push

Software vendor will expand into project management as part of Invensys overhaul

BY MARC L. SONGINI

BUSINESS applications vendor Baan Co. is again going through a restructuring, as parent company Invensys PLC realigns its various operating units in an attempt to boost its financial performance and address customer complaints about poor execution.

As part of the new strategy, Barneveldt, Netherlands-based Baan plans to expand its IT services capabilities into areas such as project management and application customization. The company currently offers users only basic services such as software training.

London-based Invensys' organizational plan shifts Baan from what had been its software group to a new division that will focus on production management technologies and services in vertical industries such as oil and gas, chemicals, food and manufacturing.

The production management division is one of two core operations that will be kept by Invensys, which bought Baan in August 2000, when the applications vendor was struggling for survival. Invensys said it will also retain a group of energy-related businesses and sell off its industrial control units.

How the changes will affect Baan in the long term is still unclear, said Dick Hill, an analyst at ARC Advisory Group Inc. in Dedham, Mass. But the fact that Invensys is keeping Baan is a reassuring sign for users, he added. "Baan does have a pretty good industrial following, and I think [Invensys officials] recognize that," Hill said.

Baan's president, Laurens van der Tang, said the reshuffling should have only positive consequences for the software vendor's installed base. "Baan is a part of Invensys' core strategy," van der Tang said.

Baan had lost money for eight straight quarters before it was acquired by Invensys. But van der Tang said Baan has been profitable for the past five quarters and has added 320 new customers during the past 18 months. Under the organizational structure announced last week, new markets could open up for Baan in process manufacturing industries, he added. The company's focus has traditionally been on discrete manufacturers.

More Services

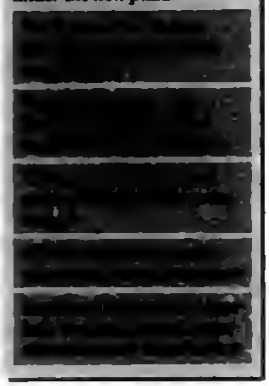
Baan is also looking to beef up its service offerings so that users don't have to turn to outside consultants for implementation and customization help, van der Tang said. Baan's goal is to take complete responsibility for managing software projects, and van der Tang said the company plans to aggressively recruit new consultants this year in order to meet that goal.

Hill said he expects that a big part of Baan's strategy will involve offering an expanded set of IT services to midsize companies that typically need a lot of assistance during rollouts of enterprise resource planning software and other enterprise applications. ▶

Stacy Cowley of the IDG News Service contributed to this report.

Teaming Up

Baan will be grouped with these Invensys subsidiaries under the new plan:



Links Sought for Mobile Networks, LANs

Roaming plans being developed for data services users

BY BOB BREWIN

The watchword at the 2002 3GSM World Congress in Cannes, France, last week was *integration*, both among rival mobile networks and between those networks and wireless LANs.

Technology vendors and wireless carriers announced a series of moves aimed at making it easier for users of wireless data services based on the Global System for Mobile Communications (GSM) standard to roam across mobile networks and wireless LANs.

For example, the London-based GSM Association said a task force of its members is exploring the technical aspects involved in linking GSM-based networks to 802.11b and Bluetooth wireless LANs. Microsoft Corp. said it's taking part in that effort, which includes issues such as user authentication and billing.

Another task force is working to clear away impediments to roaming across mobile networks. That process has largely been completed for existing networks, the GSM Association said, but it added that the roaming issue "is considerably more complex" on third-generation networks.

Meanwhile, several small software vendors announced technology that supports roaming between mobile networks and 802.11-based Wi-Fi wireless LANs.

For example, Redmond, Wash.-based RadioFrame Networks Inc. introduced a wireless access system that it said will let mobile workers use their corporate wireless LANs while within range and then switch to mobile networks. In addition, a trio of vendors led by Bern, Switzerland-based T-net AG detailed a service that supports roaming between GSM networks and the growing number of high-speed public-access wireless LANs.

Alan Reiter, an analyst at Wireless Internet & Mobile Computing in Chevy Chase, Md., said the move to embrace LANs "tells us that the wireless carriers don't want to put all their eggs in one basket." But users "can't roam without some way for the carriers to handle the billing," he added. ▶

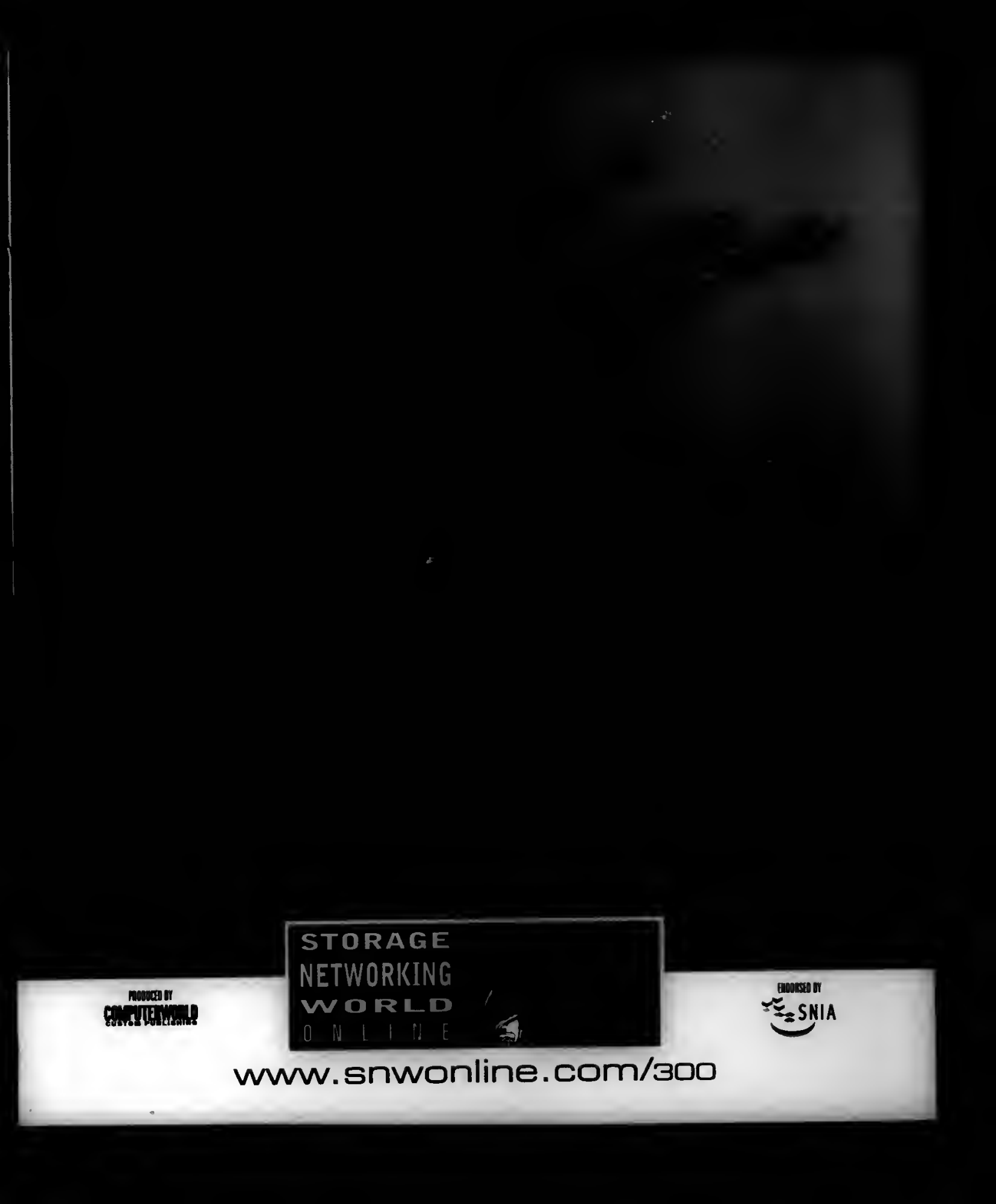
AT A GLANCE

Mobile Moves

Other announcements made at the 3GSM conference include the following:

CITRIX SYSTEMS INC. AND SIERRA WIRELESS INC. described a software/hardware combination that lets GSM-based mobile users access corporate applications.

CHECK POINT SOFTWARE TECHNOLOGIES LTD. released firewall software that's designed to protect the gateways between different mobile networks.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expect their computers

to do the same.

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MARYFRAN JOHNSON

Follow the (Privacy) Money

PRIVACY PROTECTION is like airline security now. Nobody jokes about it anymore. That's because there's so much money at stake. Companies that prove they can keep client data to themselves will simply make more money by attracting trusting customers. Those that fail to protect private information will pay through the nose in lawsuits.

MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at maryfran_johnson@computerworld.com.

Increasingly, federal and state governments are dragging companies to court for breaking their own data privacy pledges [Page One, Feb. 4]. Consider just a handful of recent examples of legal snafus and the starring role IT unfortunately played:

■ The University of Minnesota embarrasses itself by accidentally identifying more than 400 organ donors to the recipients. "It shouldn't be on a database; it is a breach just waiting to happen," says a university official. "We have IT people and researchers, and neither of the groups knows what the other is doing sometimes."

■ Eli Lily sends an e-mail to more than 600 Prozac users, inadvertently distributing the name and e-mail address of every recipient in the message. The Federal Trade Commission is not amused, and the company swiftly agrees to a settlement.

■ A vengeful former IT employee at telecommunications firm Global Crossing posts names, Social Security numbers and birth dates of company employees on his Web site. The legal consequences are still unclear.

Analysts at Forrester Research say the $47.6 billion spent online last year might have been $15 billion higher if consumers weren't so wound up about privacy concerns. Making privacy policies clearer and more understandable would increase sales, Forrester contends.

A Harris Interactive survey released last week supports that claim. The three biggest consumer concerns with online privacy were companies trading personal data without permission, the consequences of insecure transactions and the theft of personal data. Some 84% of the 1,529 people surveyed said they'd like checks and balances via "independent verification" of a company's privacy policies.

So where does IT find the green lining in this big ugly cloud? Can there be an ROI on good privacy policy? One place to look is Royal Bank of Canada, where a customer relationship management system is enabling a number of services — such as free encrypted cell phones for wireless transactions — that build trust with customers by protecting their privacy. Privacy "plays a measurable part in how customers decide [to] purchase products and services from us," says Peter Cullen, the bank's chief privacy officer. "It brings us more share of the customer's wallet."

Sounds good, doesn't it? Here are some of the key questions to consider for your own company:

■ How clean is your customer data? If those records are mismatched across business units, how can your organization comply with privacy preferences? Angry customers bring legal risk, whereas contented ones bring revenue.

■ How overgrown are your databases? Smaller, tighter databases are better bets for privacy management.

■ How alert is your privacy watchdog? Congress is mulling new privacy laws and considering changes to old ones. The pace of new international laws is also quickening.

■ How well would your company handle FTC scrutiny? The first two questions from the agency would likely be: "Did you have a system in place appropriate to the sensitivity of the information?" and "Did you follow your own procedures?"

But in the end, the most important question might just be this one: "Did you follow the privacy money?"

PIMM FOX

Give Us Liberty? Give Me a Break

THE LIBERTY Alliance Project is a consortium of vendor and user companies formed last year to create "a commercially viable, open, ubiquitous standard for network identity, authentication and authorization across a multitude of business systems and consumer products touched by the Internet," says Eric Dean, president of the Liberty management board and CIO of United Air Lines.

PIMM FOX is *Computerworld*'s West Coast bureau chief. Contact him at pimm_fox@computerworld.com.

But why bother?

Dean and officials at alliance member Sun Microsystems say Liberty isn't a competitor to Microsoft's Passport identification and authentication scheme. Instead, they say, it's a stand-alone effort to build technology standards that may even interoperate with Passport. Although the push behind Liberty is to sell companies a set of agreed-upon technologies so consumers can have single sign-on across commercial Web sites, as well as storage of passwords and personal information, there are two flaws.

First, a report by Gartner last year revealed that most consumers don't care about these so-called benefits. "We asked people which features were most important from an online service provider," said Avivah Litan, vice president of financial services at the research firm. Leading the list, at 29%, was making online credit card use safer; increased privacy came second, with 26%. Single sign-on was down the list at 19%. One-click payment (supposedly a great boon to consumers) barely showed up, at just 3%.

"What people are really concerned about is getting solicited," said Litan. Figures back this up. The Gartner poll showed that while 95% of online consumers register some personal infor-

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mation at a Web site, more than half — 54% — do so only because certain sites require registration prior to use. Only 22% register to save time, and just 17% sign up for personalized services such as shopping suggestions.

And of the 5% who don't bother to register at all, 43% say it's because they don't want more ads.

Which brings up flaw No. 2.

The Liberty Alliance, whose members include AOL Time Warner, American Express, General Motors and Sony is betting that companies will let their customers wander from site to site without reauthentication obstacles under the premise of saving time and gaining convenience.

In reality, Liberty will create a new platform for marketing programs — the very thing consumers want less of.

United might funnel a preapproved and authenticated customer to a Hertz site and receive a commission. But it's inconceivable that United would shuttle consumers to American or JetBlue Airways. Heck, they don't honor one another's tickets, so it's unlikely they will blithely hand over potential customers.

Liberty's set of technology standards wouldn't make interoperability a business model. But it would clutter our lives with more marketing programs. ▶

MICHAEL GARTENBERG

Issue More Laptops to The Masses

THE NOTEBOOK computer has evolved from being a friend of the road warrior and a business status symbol to a mainstream tool. Yet too many users still find themselves constrained by IT policies that insist that only mobile workers who travel for most of their work are entitled to them. But most IT organizations would do well by allowing more users to work with mobile technology.

One reason for not buying users laptops is their cost. But the price premium for laptops is worth it. For most users who fit the knowledge worker profile, having a laptop instead of a desktop system often increases productivity. On average, companies can expect a return of least one to two hours of additional work time per day per user. This extra productivity makes up for the higher cost of the laptop when measuring the total cost of ownership over its life, which is generally about two years.

But many laptop deployments fail and are rejected by end users. Here are three reasons why this occurs and how IT departments can increase user satisfaction:

■ The major reason is users' perception that they can't use a laptop as their sole computer — IT departments are often deluged with requests for both laptops and desktops for individual users. There is rarely a business justification for this. With adequate training, employees can work effectively with a laptop as their sole system. Although there's always a class of high-end users that will require the fastest processor possible (consider for a moment whether any of your users are working on the human genome project or something similar), the vast majority can make do with the performance of today's notebook-class systems. While employees will have to learn some remote computing skills, such as using a virtual private network or switching between home and work printers, those tasks should be included as part of standard IT training.

Michael Gartenberg is research director for the client access and technologies group at Jupiter Media Metrix Inc. in New York. Contact him at mgartenberg@jupitermedia.com.

■ Another reason: Some IT department policies make it extremely difficult for users to work effectively with their systems. My favorite example is a company that eschewed desktops for laptops for all employees and purchased top-of-the-line ThinkPad systems from IBM. The company then had the systems bolted to users' desks; they were required to get permission and a key from a supervisor to take a computer home or on a trip. Needless to say, most users didn't see any productivity gains in terms of additional hours worked.

Also, laptops are highly personal items, and users must be consulted about form factor and size. Ideally, IT departments will offer two models: one full-featured system with integrated optical disks and larger screens and keyboards for users who want full desktop functions, and another that's an ultraportable system for users more concerned with size and weight than with the feature set of a larger system.

■ IT departments need policies about what's allowed on users' systems. A good rule of thumb: Give users latitude regarding their configurations, but insist that IT will support only standard IT configurations and not end-user modifications.

Today's information and knowledge workers are expected to do more with less, so giving them laptops is a step in the right direction. How many of you work at companies where laptops are used as the primary system? Let me know, and I'll publish the results in a future column. ▶

READERS' LETTERS

Ignorance Is No Excuse

THERE IS NO need for a CIO to ever be caught in an accounting scandal ["CIO in Scandal," Business, Feb. 11]. I agree with some of your points to protect yourself from crime, but let's not forget one of the basic tenets for maintaining the integrity of a company's accounting records: delegation of responsibility. The CIO in your article may be able to claim ignorance, but he was also president of the subsidiary primarily involved in the embezzlement. In that role, he should have ensured the proper separation of duties of the accounting staff. Just separating the administration of security from the chief accountant isn't enough. Greed and the willingness to accept the reporting of good results, vs. addressing the actual poor performance, played a huge role in the scandal. As we see from the article, even ignorant greed has a price.

Gary Moore
Manager, accounting systems
Richmond, Va.

YOUR STORY is most suspicious. In a business big enough to have a CFO, where were the outside auditors when certified the books for the bank? What you seem to have here is an insider white-collar crime that has been aided and abetted by an apparently unusually naive CIO. Procedures, including separation of functions and adequate controls, can always be overcome by a knowledgeable insider who finds that motive, opportunity and means irresistibly beckon. If anything can be learned from the story, it is the need for a CIO, as a corporate officer, to know something about the business as well as the administration of technology.

Stephen Richard Levine
Chief technologist
Franzel Mortgage Consultants
Westlake Village, Calif.

Falling for Propaganda?

I'M DISAPPOINTED at your upbeat discussion of Microsoft's Farsite project in the article "Brave New OS" [Future Watch, Feb. 11]. This is the ultimate vaporware. You say it embodies the characteristics of "fault tolerance, self-tuning and robust security" — qualities that Microsoft has consistently proved incapable of achieving. Worse, this is a blatant propaganda move against Linux: Why buy fault-tolerant Linux servers with robust security now, when you can get self-tuning and serverless networks from Microsoft any day now? I'd expect Microsoft to issue such vapor and FUD, but *Computerworld* is usually too perceptive to print it, especially in such an all-believing manner.

Steve Litt
Content lead
Troubleshooters.com
Orlando, Fla.

Security Has Customers

WHY DOESN'T Mathias Thurman just disable all network access and superglue all floppy disk drives closed ["Virus Attacks Can Enter Through Many Doors," Security Manager's Journal, Jan. 28]? His policies will severely limit creativity at his company and foster negative attitudes toward security managers and security issues. All of his users will be enemies, not supporters. Think customer service — how can I support my internal customers, yet protect our corporate infrastructure?

Stewart Givens
Research Triangle Park, N.C.

Editor's note: *Readers can express their opinions on topics addressed in the Security Manager's Journal at our associated forum.* **www.computerworld.com/q?a1590**

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. Internet: letters@computerworld.com. Include an address and phone number for immediate verification.

Quick Link For more letters on these and other topics, visit our Web site. www.computerworld.com/q?q5000

Ensuring Trust in Web Services

SCOTT MCNEALY

Microsoft Should Line Up With Liberty Alliance

I THINK EVERYONE in the high-tech industry was a bit surprised by Bill Gates' recent memo to his company — surprised that it wasn't written 10 years earlier. Still, I suppose it's good news that Microsoft will finally begin to focus on building "trustworthy" products.

The bad news is that the occasion wasn't used to deliver an entirely different message. Well, not entirely different — it could still use the word *trustworthy*, though in a much broader context.

Microsoft is clearly concerned that its Web services initiative, called .Net, won't get off the ground if consumers can't trust the company's products. That's only half the story.

Consumer trust is indeed vital to the success of Web services, but so is having the trust of other service providers and software vendors.

Every major technology company envisions a future in which new Internet-based services will interact seamlessly (often without human intervention) to make our jobs and lives easier. The benefits of such services are innumerable and the potential market unbounded. But to work, these services can't be tied to any single company or platform.

The beauty of working in an open, multivendor framework is that software developers and service providers can target a much broader market to create services that can be delivered to everything from PCs to PDAs, from mobile phones to automobiles, and even to devices that have yet to be invented.

The value of those services is multiplied by the way they interact with one another, setting off a chain of electronic events at just the right time and place, reaching across multiple platforms and networks.

The clear need for cooperation accounts for the growing popularity of the Liberty Alliance (launched in part by Sun Microsystems), made up of a diverse group of companies that includes makers of automobiles, computers, home electronics and wireless phones, as well as providers of credit cards, transportation, communications and online services. Together, these companies represent more than 1 billion customers.

The Alliance's aim is to come up with an open standard for the following three things:

- Identity, so businesses and consumers have a common way of referring to one another.
- Authentication, so everyone has a good way of confirming that people are, in fact, who they say they are.
- Authorization, so people can actually use the services they've signed up for.

Having a single, open standard will make that whole process easier to manage. The alternatives: multiple proprietary standards, which would mean huge overhead and interoperability problems. Or a central authority, which would mean a single point of failure and control, which no one wants. No one who really cares about security, anyway.

The many companies in the Liberty Alliance want to do this the right way, so they can create new services that will work with one another's existing services.

Just as important, the Liberty standards will enable people to administer their own personal profiles, preferences and permissions and securely share that information with the organizations they choose.

Microsoft, with its proprietary Passport identification system, is trying to leverage its monopoly in desktop operating systems to become the repository — and sole guardian — of vast amounts of personal information.

But if Microsoft is really serious about its new commitment to security (to say nothing of open standards or the right of individuals to control their personal information), it should abandon the monopolistic, single-point-of-failure Passport system and join the Liberty Alliance.

BRIAN ARBOGAST

Microsoft Exec: Industry Should Follow Our Lead

MICROSOFT'S Trustworthy Computing initiative, recently detailed in a companywide e-mail from Bill Gates, represents the next step in the company's ongoing effort to create a computing experience that's fundamentally reliable and secure. It's a call to action for the entire technology industry, which, as we've seen with the SNMP vulnerability identified earlier this month by the CERT Coordination Center, shares in the challenge of making everything from individual chips to global Web services as secure as possible.

To be sure, we at Microsoft are the first to admit that we can do a better job of creating safer and more secure software and services. At Microsoft, we believe that such self-evaluation, along with a passion to push the envelope on technology and the experience we offer customers, is a key ingredient in our success.

This same passion and commitment can be seen in Microsoft's leadership in the world of Web services. Our efforts include the following:

- Advancing critical industry standards such as XML, SOAP, WSDL and UDDI.
- Co-founding, along with other industry leaders, such as Accenture, BEA Systems, Fujitsu, Hewlett-Packard, IBM, Intel, Oracle and SAP, the Web Services Interoperability Organization (*http://WS-I.org*), a group chartered to provide our shared customers with a clear and consistent road map for creating and implementing interoperable Web services.
- Giving developers tools such as Visual Studio .Net and the .Net framework, which make it easier to build upon these standards to create rich, secure applications and Web services.

This same customer focus is what drove us last fall to introduce a vision for a universal, or "federated," authentication system. In October, we released early drafts of some technical specifications that will serve as the foundation for this vision. Just as those in the banking industry worked together to create the ATM network that so many of us rely on today for a convenient banking experience, we see tremendous value in having a federated, trusted and universal network of authentication.

We believe deeply in this goal and continue to work with industry leaders, including members of the Liberty Alliance, to advance our shared vision of trusted interoperability and universal authentication on the Internet. Passport, Microsoft's implementation of an online authentication and single sign-in service, is operational today. Since going live in 1999, Passport has grown to 200 million active accounts and processes more than 3.5 billion authentications per month. The Liberty Alliance is working on future specifications upon which interoperable authentication services may be built. Consequently, we don't believe that Passport and what the Liberty Alliance is attempting to define are mutually exclusive.

Microsoft has been working on many fronts to advance this new era of trusted computing, from fixing the short-term issues we face today to undertaking the long-term research that will lead to the fundamentally trustworthy systems of tomorrow. This is the type of leadership that's required at this critical moment in our industry — constructive action based on real technology solutions for customers, rather than rhetoric. That's what the industry and our customers want, and what Microsoft will continue to deliver.

Editor's note: *This column was written at the request of Computerworld in response to McNealy's column.*

Here are three-hundred-eighty-nine-thousand-four-hundred and thirty-four

reasons why you'll thank HP for building the Superdome server. That's the number of transactions per minute it recorded, according to the latest TPC-C benchmark results. You'll appreciate how much more productive you can be with a UNIX® server that's 76% faster than IBM's highest published non-clustered TPC-C result. That's fast enough to satisfy even your most demanding IT manager. And your CFO will relish Superdome's price/performance ratio of $21.24 per transaction.

HP's Superdome server will have you handling more applications, not only faster, but more reliably. It's designed with your always-on Internet infrastructure in mind, so you'll be working on multiple projects, across multiple platforms, with ease. Superdome is equipped to handle the Intel® Itanium™ processor architecture, which HP co-developed. This breakthrough technology blends high volume with high performance, and it will keep you poised for seamless upgrades. We could give you a million more reasons. But why take our word for it? Check the Top 500 Supercomputer Site list.

Infrastructure. it starts with you.

Find out how Superdome is helping Amazon.com dramatically increase their performance. Visit www.hp.com/large/superdome for your copy of The HP Superdome Advantage resource guide. Or call 1-800-HP-ASK-ME

invent

HP's TPC-C benchmark of 389,434 transactions per minute was achieved on a 64-way PA-8700 Superdome running Oracle9i Database. As an OLTP system benchmark, TPC-C simulates a complete environment and is modeled after actual production applications and environments rather than stand-alone computer tests which don't evaluate key performance factors (for example, disk I/Os, data storage, backup and recovery, user interface, and communications). Price performance of $21.24/tpmC. TPC-C is a copyright of the Transaction Processing Performance Council. Further TPC-C information is available from http://www.tpc.org. IBM's TPC-C result, available 4/13/2001, is 220,807 transactions per minute running on a IBM P680 running Oracle 8i, with price performance of $34.18/tpmC. Oracle is a registered trademark, Oracle8i and Oracle9i are trademarks or registered trademarks of Oracle Corporation. Itanium is a trademark of Intel Corporation. UNIX is a registered trademark of The Open Group. Amazon.com is a trademark or registered trademark of Amazon.com, Inc. Total system availability date, May 15, 2002, hardware available now. Limit one HP Superdome Advantage resource guide per customer. Allow 6 to 8 weeks for delivery. ©2002 Hewlett-Packard Company. All rights reserved.

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WORKSHOPS & LABS

Interoperability Lab

SNW is presenting the Interoperability Lab, the world's largest storage networking interoperability extravaganza. The lab, organized by more than 50 SNIA member companies, will showcase storage networking configurations that address end users' storage concerns. To reinforce the concepts being taught in the SNW tutorials, the lab will demonstrate solutions for backup and recovery, storage networking infrastructure design, storage virtualization, and management of storage networks. Those attending will be able to tour the lab and discuss with engineers the technical design of the configurations and the business problems that are being solved.

Practical Workshops for IT Users

Referenced tips, tools and techniques are usually the #1 discussion point of IT users when they network at events. To complement this need, SNW has established a multiple track set of "Practical Workshops" on Day 2 of the general sessions with both IT users and vendor CTOs leading the discussions.

Primer: Considerations for Building an Internal Storage Utility Infrastructure

This session will focus on how many recent and upcoming advancements in storage management, such as policy-based management, application awareness, and security will finally begin to enable the utility concept for storage infrastructure.

SESSION HIGHLIGHTS

Featured Speakers

Listen to senior executives from the user and vendor communities in corporate America's top brand name companies. No conference focused on enterprise infrastructure, data management and storage networking comes close to the quality featured speakers at SNW!

User Case Studies

SNW delivers a stellar lineup of IT user case studies with senior executive presenters from Warner Brothers, The Weather Channel, CNN and Leitch, Burlington Coat Factory, Northern Trust Company, Blue Cross/Blue Shield, Bank of Montreal and more. You asked for more IT users... SNW delivers!

CTO Insights Executive Panel

Delegates to past SNW events asked for more CTOs, the technology vision and the practical insights into how to implement them. SNW has done it! See a high-profile CTO-only panel representing the top thought-leaders in the industry.

ROI Insights Executive Panel

In these days of flat or declining technology budgets, business and IT executives alike rank quickly achieving a positive return on their information technology investments as one of their top three priorities -- and challenges -- in 2002. To keep costs down and to ensure maximum payback quickly, some companies have pushed technology purchasing decisions to the highest levels of the organization. Others are sub-dividing large projects into smaller ones that must demonstrate a positive ROI before moving to the next phase. Panelists will discuss what has and hasn't worked as they strive to demonstrate the bottomline payback of technology investments.

"Storage Networking World is a unique conference that blends representatives from both the user and vendor communities in a single forum. For users, this is an opportunity to gather and discuss long-term strategies, current issues and [illegible] as well as every-day problems and [illegible] type of information is invaluable for the end user."

- [illegible]
[illegible] VP and Director of Enterprise [illegible]

"Attending Storage Networking World is a big plus for me in terms of seeing which products are out there and managing my vendor relationships. You get to talk to the top people in the industry and discuss storage solutions based on your company's specific needs."

[illegible]
[illegible] Discovery Communications

USER CASE STUDIES

ANTHONY LLOYD
Vice President
Computer Operations
Warner Brothers

VICKI HAMILTON
Vice President
Shared Services & IT Operations
The Weather Channel

MIKE PRINCE
CIO
Burlington Coat Factory

BOB VENABLE
Enterprise Systems Manager
BlueCross BlueShield of Tennessee

BONNIE CLARK
CTO
Mattel

TODD ROTH
CTO
Leitch

KARL HUF
Vice President
Northern Trust Company

PLUS: Executive User Case Studies from:

- **WRQ**
- **Hannaford Brothers**
- **Bank of Montreal**

FEATURED SPEAKERS

LINDA SANFORD
Senior Vice President and Group Executive
Storage Systems Group
IBM

BOB MUGLIA
Senior Vice President of Enterprise Storage Group
Microsoft

NORA DENZEL
Vice President and General Manager
Network Storage Solutions
Hewlett-Packard

JAMES RUTHERFORD
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Founder and Senior Analyst
Enterprise Storage Group

MARC FARLEY
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Building Storage

DIANNE MCADAM
Senior Analyst
Illuminata

CTO INSIGHTS EXECUTIVE PANEL

KEVIN DALY	RANDY CHALFANT	PAUL RUTHERFORD	STEVE SICOLA	ROB SIMS
CTO	Director/CTO	VP/CTO	Director/CTO	VP/CTO
Quantum	StorageTek	ADIC	Compaq	Crossroads

CONFERENCE PROGRAM

Tuesday, April 2nd

10:00am – 12:00pm
Storage Networking World Primer
with Steve Duplessie

1:00 – 6:00pm
Tutorial Tracks
Topics include: Storage for LAN Managers; Backup/Restore; Storage Management; Networks for SAN Managers; Storage Virtualization; Security; IP Storage; Infrastructure Design; Disaster Recovery; User Experiences

1:00 – 6:00pm
Golf Outing

7:00 – 9:00pm
Pre-Conference Networking Reception

Wednesday, April 3rd

7:30 – 8:30am
Buffet Breakfast

8:30am – 12:00pm
Keynote/General Sessions

12:00 – 1:00pm
Lunch

1:00 – 5:00pm
Keynote/General Sessions

5:00 – 8:00pm
Cocktails, Expo, Interoperability Lab, Buffet Dinner

Thursday, April 4th

7:30 – 8:30am
Buffet Breakfast

8:30am – 12:00pm
Keynote/General Sessions

12:00 – 1:30pm
Lunch and Expo

12:00 – 7:30pm
Interoperability Lab

1:30 – 3:30pm
Keynote/General Sessions

3:30 – 5:30pm
Practical Workshops (6)
Topics include: ROI/TCO; Management; Deployment

5:30 – 7:30pm
Expo

6:30 – 7:30pm
Cocktails on the Expo Floor

7:30 – 9:00pm
Gala Dinner and Entertainment

Friday, April 5th

7:30 – 8:30am
Buffet Breakfast

8:30 – 11:45am
Tutorials/Practical Workshops (cont.)
Topics include: ROI/TCO; Management; Deployment

11:45am
Conference Concludes

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General Conference (April 3 & 4): (Includes Expo, Meals and Receptions)					
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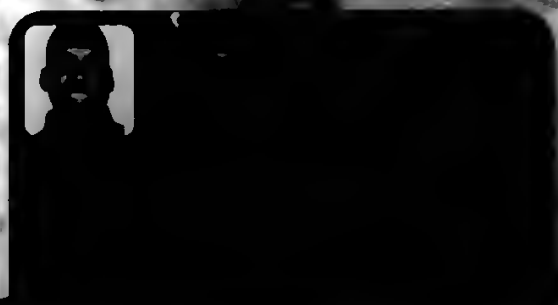
Additional Options: Technical Tutorials/Workshops (April 2 & 5)	$395 Additional	$445 Additional	No	Apr. 2 & 5	Yas
Total 4-day Packaga (General Conference & Technical Tutorials/Workshops)	$1,490	$1,690	Yas	Yes	Yas
Expo, Maals & Racaptions Only Packaga	$450	$495	No	Yas	No



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THIS WEEK

NOISE FILTER

With so many vendors pitching so many products, IT managers need a strategy to block out the marketing blather and figure out which are the best products for their organizations. That's why IT pros like IMG Worldwide's Gergely Tapolyai (above) talk to peers to find out which vendors fudge the numbers and which ones deliver the goods. PAGE 36

EDUCATIONAL ENTREPRENEUR

Drexel University CIO John Bielec is pushing several IT initiatives to help his school make more money. For example, Drexel acts as an ASP for high schools and local colleges. Just don't call the money these activities generate revenue. PAGE 38

CIO CONTRACTS

IT leaders who have made it to the executive suite are beginning to hammer out contract agreements that cover their compensation and benefits in the event of bankruptcy filings, takeovers and other actions they can't control. PAGE 40

WORKSTYLES

Carie Allen, technology manager in the applications development group at West Group, a division of The Thomson Corp., talks about what it's like to work at a company that makes software for the legal industry. PAGE 42

JOE AUER/DRIVING THE DEAL

Finding Responsibility

ARE YOU ACQUIRING RESULTS OR RESOURCES? The answer to that question will yield a fifth important, essential "truth" whenever you negotiate a technology deal. About six months ago, I mentioned 10 of these truths, and detailed four of them.

The answer to this "results or resources" question establishes which side will bear responsibility for the results you're expecting from a deal, and you need that answer before your acquisition process begins. In a "results deal," the vendor is responsible, while in a "resource deal," it's the customer.

For more than 20 years, I have testified as an expert witness in court cases involving customer-vendor disputes, and almost every one revolves around the question of who's responsible. In most of these cases, contractual responsibility for the success of the deal is unclear or mutual, or the vendor's form contract has disclaimed any responsibility. The bottom line: If you, as a customer, fall short in a contract of clearly and completely assigning full responsibility for final results to the vendor, you're responsible.

A results deal. In a results deal, you, the customer, effectively get the supplier to fully accept the risk of failing to produce the solution, or the expected outcomes or results. If the vendor's representatives talk about "solutions" to your executives or end users, the vendor is held accountable for producing them.

This sounds good, but you can shoot yourself in the foot if you're not careful putting the deal together. You might say, "OK, we have them committed to results. But we're going to manage the deal. After all, it's our money and our project." Don't do it! That shifts some responsibility for results to you, and the vendor is off the hook. The vendor must have complete authority to have complete accountability.

Another thing you might say is, "We have them committed to results, but we're going to tell them the policies, equipment and staffing levels they must use." This also ruins a results deal. I've seen countless vendors avoid accountability because they were "forced" to do things according to their customers' dictates. The customers got too proscriptive and shared responsibility for the outcomes.

Another important point about a results deal: Make sure your obligation to pay a vendor is triggered only by its producing the agreed-upon results, whether by reaching certain milestones or upon project completion.

If it's a results deal, why should a vendor's invoice force you to pay? Why should a set monthly date, the signing of a contract, accepting delivery or anything short of contracted-for results require you to pay? Make sure your money is tied directly to the vendor's performance. The satisfaction of having a good contract is exceeded only by holding payment until the vendor produces.

A resource deal. In certain instances, there's nothing wrong with a resource deal, especially if you don't expect the vendor to produce the final results or outcomes. Maybe you just need some equipment, software or support to help you produce the results. Actually, sometimes you can't predefine the results, or you may just need some tools to distribute — like 3,000 desktop PCs. Or maybe you need help on a general software development team or ongoing maintenance work and the results aren't predetermined. These are resource deals. In these deals, you must pay attention and manage the resources, tasks, time frames and progress, because you're responsible for the results.

Joe Auer is president of International Computer Negotiations Inc. (www.dolphinpeak.com), a Winter Park, Fla., consultancy that educates users on high-tech procurement. ICN sponsors CAUCUS: The Association of High Tech Acquisition Professionals. Contact him at joe@dolphinpeak.com.

The first thing I do when I'm asked to help on a deal gone bad is try to determine whether it's a results or resource deal. Who has the responsibility for the outcomes? In most deals I look at, the answer is unclear. If that's the case, you'll never win a dispute that goes to mediation or court, where you're trying to blame the vendor for not producing the results or solutions that it so eagerly promised verbally during its sales pitch.

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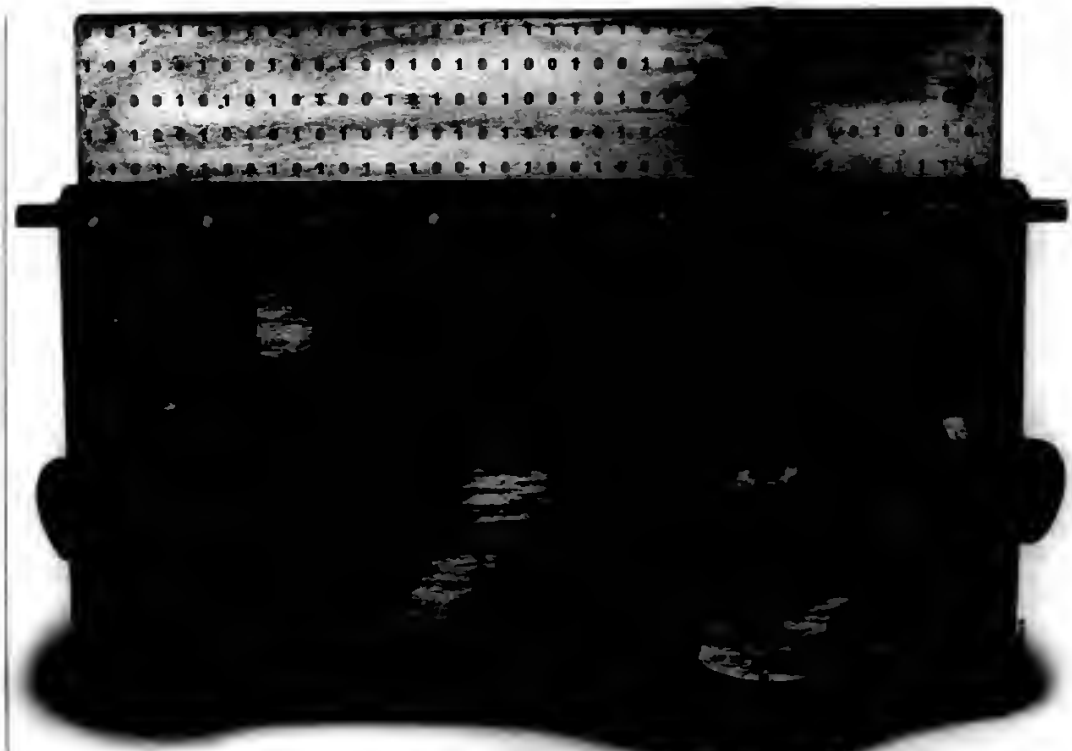
The killer deal isn't all it's cracked up to be.

By Kathleen Melymuka



AN IT MANAGER was negotiating a big software deal at lunch with the president of a vendor company. The manager wasn't getting his way, so he walked away from the table in a huff. The vendor caved in, lowered the price 40% and made the sale. Later, the IT manager said he never understood why that vendor's service was consistently terrible.

"We negotiate so hard with suppliers that they don't make any money, and then we wonder why service is so poor," says Bart Perkins. "You've got to let the other guy make a profit."

IT managers have a lot to learn about the process of choosing an IT vendor, says Perkins, former CIO at Dole Food Co. and Tricon Global Restaurants Inc. who is now managing partner at Leverage Partners Inc., a consulting firm that splits its headquarters between Louisville, Ky., and Washington. Leverage Partners helps companies acquire IT products and services.

RELATIONSHIPS

"Vendor buys" account for more than [illegible] typical IT budget outside of personnel costs, Perkins says. In a Fortune 500 company, there may be as many as 400 people buying IT products, and very few are giving the process much thought, he adds. Some are following architectural standards, others are just buying what's cool and expensing it.

Some IT sales sneak in like Trojan horses, buried in plant equipment or taken on through mergers and acquisitions; others evolve — you bought telecommunications services from

How to Choos

New England Telephone, which became Nynex and then Bell Atlantic, and now you're dealing with Verizon.

"This is the real blocking and tackling of IT, and we put it on autopilot and nobody thinks about it," Perkins says. But a few IT leaders *have* given the vendor selection process a lot of thought, and they share some ideas about what makes their approaches work.

1 Establish the need. "The day of deep pockets is gone," says Jim Thannum, director of Internet engineering and communications at FedEx Services Corp. in Memphis. "The technology should advance the business. It's not there to entertain us."

2 Select a team, "not just the tech people," says Colleen Mahoney, director of vendor relations for information resources at Marriott International Inc. in Bethesda, Md. An all-tech vendor-selection team is a disaster waiting to happen because members may get blinded by the technology.

Include end users and people from finance, training, application development, vendor relations, legal and privacy/security, says Mahoney. At The Coca-Cola Co.in Atlanta, a team works with its Minority/Women-Owned Business Enterprise Program to keep minority firms in the selection loop.

3 Choose a strategy, says Diane M. Stanko, director of procurement for global IT and services at Alcoa Inc. in Pittsburgh. For example, with technologies such as e-mail, databases and antivirus software, there's a competitive advantage in enabling standard, worldwide use. In other areas, such as telecommunications, a standard may not be critical.

Decide how to go to market as well. "We try to take full advantage of the competitive marketplace using e-tools such as online bidding and e-procurement," Stanko says.

4 Write a request for proposals (RFP). It will force the team to think about what's important. "We look at architecture, maturity, cost, serviceability and reliability of product," says Thannum. "We look at their customer base, pricing arrangements, support and company stability. We need to be sure if a product touches our customer that we have 24-by-7-by-365 support. That's the rule."

Determine your evaluation criteria and the amount of weight accorded to each requirement as you write the RFP, Perkins suggests — and don't waver. He tells of one company that changed the weightings to keep its emotional favorite from being bypassed. "It completely derailed the entire selection process and threw the project into a tailspin from which it never recovered," he says.

5 Focus on total cost of ownership, not just initial cost, says Perkins, and don't get hung up on how much each department pays out. Look at how much your company pays.

6 Develop your negotiation strategy in parallel with your RFP, Mahoney says. For example, Marriott demands that a product work to the specifications it outlines before paying for it. "It doesn't make any sense to hide these things and spring them on the vendor after the fact," she says. "We want to be upfront because we want them to do the same."

7 Consider the value of relationships as you evaluate bids, Mahoney adds, "because not all [vendor] relationships are created equal."

For example, because Coca-Cola has identified roughly 20 strategic suppliers, it can often target one or several of them and skip the RFP, says Kimberly Fey, relationship manager for information infrastructure.

If you're rebidding a product or service that's already in place, consider the value of incumbency. "There is a cost to change," Perkins says. "Figure it out upfront."

Also, think about intangibles. If a prospective vendor is one of your biggest customers, will it take its business elsewhere if it doesn't get the deal? "Don't forget to factor the value of that relationship into the equation," Perkins says.

8 Keep your options open. As you negotiate, deal with multiple vendors simultaneously, Perkins says. "If you can get a little bidding contest going, that can be a good thing — within reason." Also negotiate the concerns of all your team members — from legal to training — in parallel, not serially, he says. Otherwise, concerns left until the end may not get the attention they require.

For example, during the negotiation and contracting process, Coca-Cola works with its strategic suppliers to identify second-tier opportunities for minority and women-owned businesses.

9 Be a good customer. Understand the cost structure of the vendor so you can help it cut you a better deal, Perkins says. For example, if you were buying PCs from a reseller, you could offer it an advance monthly buying forecast. That saves the reseller money in RFPs it won't have to answer, inventory it won't have to stock unnecessarily and scheduling costs because company officials know the workload in advance. In return, you should expect great prices and service levels.

This win/win approach is at the heart of all good vendor agreements. "Both sides must benefit from the relationship," Mahoney says. "If we structure a contract where only we benefit, we may end up not getting the best of their resources."

10 Split the contract between two vendors if possible, Perkins says. "From the IT standpoint, you may want to standardize, but from a business point, you have to look at [the] entire value of the business," he says.

Splitting a contract isn't always desirable, but it can be done if you're dealing with commodity hardware, systems integration or telecommunications services. "You can give 60% to AT&T and 40% to MCI," says Perkins. "It keeps them on their toes. And if they mess up, it's easier to change it."

11 Anticipate the future. Perkins once negotiated for a software contract at a time when he knew his company was likely to spin off a division within two years, so he wrote into the contract the ability to transfer licenses at the same price. "You don't always have that luxury, but, to the extent you can, address it," he says. That goes for impending mergers and acquisitions as well.

12 Don't let technology turn your head. "It's so easy to get enamored with technology," says Thannum, "but you've got to look at it in terms of all those other metrics. You've got to stay pragmatic."

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Filtering Out the Noise

Endless marketing blather makes it hard to spot the right IT products for your organization. By Melissa Solomon

AN END-TO-END, state-of-the-art, leading-edge solution that blah, blah, blah. Face it, everyone offers an end-to-end, state-of-the-art, leading-edge blah, blah, blah.

So Gergely Tapolyai, global network and telecommunications director at Cleveland-based sports, entertainmeot and literary marketing firm IMG Worldwide Inc., cuts to the chase.

"We're not looking for the positive feedback," he explains. "We're looking for the negative feedback."

Take the time Tapolyai was shopping for an Internet service provider that could offer IMG high-speed connections in 37 countries. He had narrowed his search to two finalists. Then he got the real dirt from his peers.

Which vendors fudge on the numbers when it comes to uptime? Who's inflexible with their contracts?

Tapolyai turned to Chiefofficer.com, a closed online community of senior executives that he helped create. "They did sway me a lot," he says of the advice he got there. So mucb so that he chose a company that wasn't even in the running: UUNet. The Ashburn, Va.-based unit of WorldCom Inc. was the firm with which his peers seemed to have the fewest and least significant problems, says Tapolyai.

Call it survival of the fittest, but with so many vendors making so many pitches about so many products, IT managers need a strategy to filter out all the noise and home in on the products that will do the best job.

Where to Start

The best way to get started? "Research, research, research," says Jamie Gruener, a senior analyst at The Yankee Group in Boston.

First, make sure the product offers a quantifiable return on investment. And doo't just accept figures that vendors toss out, Gruener warns. Make sure you understand how they come up with those numbers, and determine your budget ahead of time so you know exactly what the ROI will be.

"Everybody's jumping oo the bandwagoo about ROI," says Gruener. "But the oumbers are interesting, like [total cost of ownership]. People need to he wary."

Tapolyai says that before he even looks at products, he weeds out the vendors. He finds out the direction the industry appears to be heading and determines whether all of the vendors are moving in that direction. Theo he weighs the vendor's stability vs. its ahility to provide personalized service.

Start-ups can offer good value and innovation, says Gruener. But it's important to question the risks. "What kind of funding do they have? How is support handled?" he says, adding, "Sometimes it isn't worth the risk."

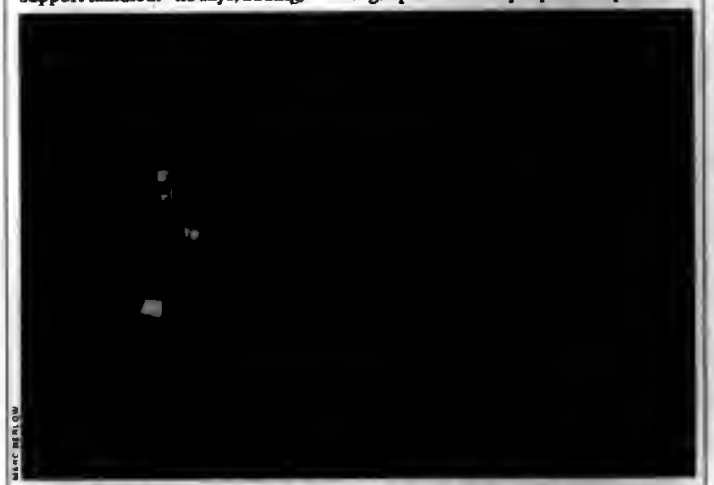
Wilma Kumar-Rubock, vice president and CIO at Washingtoo Gas Light Co. in Washington, suggests visiting vendors' development sites to make sure they're not fly-by-night operations. Sometimes, there are no behind-the-scenes people, and what you see is what you get, she says. She also suggests hiring research firms to look under the hood to find the details that vendors may he trying to hide.

RELATIONSHIPS

Another way to reduce the risk of working with a start-up is to plan an exit strategy so you can get out of a contract if things don't go as planned, advises Dorothy Hawkins, vice president of IT for the energy distribution group at NiSource Inc. in Merriville, Ind. Also, he sure you and the vendor agree upfront on a clear set of deliverables, she says.

Tapolyai says he makes it a point to get past the salespeople and speak directly to the engineers during the buying process to learn exactly what he can expect from them.

"Once the signature is oo the cootract, they're gone," he says of the salespeople. "I want to see a structured layout — what happens if this person gets hit by a bus? Who's going to take over? . . . I am pretty much a pain in the ass."



MARC MELLOW

NEGATIVE FEEDBACK from peers plays a key role in IMG Worldwide's decisions about prospective vendors, says Gergely Tapolyai, network and telecommunications director at IMG.

The Customer Knows Best

Jon Dell'Antonia, vice president of MIS at OshKosh B'Gosh Inc. in Oshkosh, Wis., starts the buying process by working with end users to determine exactly what they want the system to do. Then Dell'Antonia and the end users come up with a list of potential vendors, rank their top two or three priorities and meet with the vendors.

"If you've got your requirements defined, then it's, 'Here's what we need, tell us what your product can do to help us,' " he says. If vendors "waltz around" the topic, Dell'Antonia says he just asks flat out if they're able to meet a specific requirement. If they can't, he'll end the meeting right there.

He also recommends that you ask vendors for customer references and then check with those customers to find out how their products were installed, how the support was, whether the product still works and so on.

"If they can't give you good, solid, positive references, then you've got to wonder," Dell'Antonia says.

Finally, before making a decision, Dell'Antonia sits down with his entire team — IT staffers and end users — to review the offerings and take a vote.

"It is not just an IT-driven process," he says . "It's not, 'We pick it, you get it.' If you doo't involve your end user in the selection of your system, it ain't going to work. You're just setting yourself up for failure." ◗

Lesson number one in global acquisitions: Getting different business cultures to work together smoothly is no walk on the beach. Trying to get different networks to do the same can be an even bigger hassle. So how do you make suddenly acquired systems work for you—instead of against each other?

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Big Man On Campus

Moneymaking lessons from Drexel University's John Bielec. By Julia King

PHILADELPHIA

DREXEL UNIVERSITY CIO JOHN BIELEC MAY work for a not-for-profit institution, yet the man is a consummate entrepreneur, a person who clearly thrives on making or saving tens of thousands of dollars in the course of doing his job.

Consider the deal Bielec has going with software giant SAP AG, from which Drexel collects an estimated $100,000 per year in subsidies in exchange for hosting SAP software that other colleges and high schools tap into for teaching purposes.

Add to this the estimated $1 million-plus that Drexel receives for providing outsourced computing and networking services to nearby MCP Hahnemann University in Philadelphia, Cabrini College in Radnor, Pa., and Neumann College in Aston, Pa., and the total amount of incoming dollars easily stretches into seven figures.

Just don't call it revenue. Instead, Bielec prefers to quantify the incoming dollars in terms of the additional benefits and services they enable Drexel to offer its own user community of 20,000 students, faculty and administrators.

High-Capacity College

"It turns out that Drexel's computing environment is significantly more robust today because of these arrangements," Bielec says. For example, Drexel boasts more than 50 high-capacity IBM and Sun Microsystems Inc. servers and an 8TB storage-area network. Its 62-acre urban campus was the nation's first 100% wireless university.

Additionally, all software upgrades and changes are conducted automatically over the network, and all students and faculty members have access to a broad array of IT-enabled capabilities, including high-speed Web connections — 100M bit/sec. service to each and every outlet on campus — and a private-label online bank. Everybody on campus uses the Web for everything, from registering for courses and paying tuition to filing term papers, taking tests and checking grades.

"We never would have been able to have these investments without these arrangements," Bielec notes, although he declines to disclose the university's annual IT budget or to quantify how much its various moneymaking deals bring in each year.

"As you're able to invest more dollars, your win comes from capacity, which increases exponentially," he explains. "The IT business isn't a one-for-one relationship. There's a doubling, even a quadrupling of capacity [for every dollar invested]."

Any new capabilities or services that Drexel is able to develop with the additional money are in turn extended to its "customers."

Cabrini College, for example, now offers about a dozen online classes. It will be a 100% wireless campus, like Drexel, by next year.

> **I'm basically an incrementalist. I can see the possibilities, but I don't want to get sucked into the big picture.**
>
> JOHN BIELEC, CIO
> DREXEL UNIVERSITY, PHILADELPHIA

We couldn't have done that on our own," says Nancy Santos Gainer, a spokeswoman for the 2,100-student liberal arts school. Cabrini's marketing plan includes attracting new students with its high-tech campus.

Moreover, "when we go completely wireless, there will be no need for PCs in our computer labs [since students will use their own laptops]," she says. "We're trying to get out of the hardware business by swapping assets for access [to Drexel's IT facilities]."

'Salami Tactics'

It's a switchover that Bielec will accomplish using what he calls "salami tactics." This entails "slicing away" all noncritical hardware, software and other IT assets that are physically located at the Cabrini campus "while providing access to equal or better service than they had before," he says.

Cabrini, like all of Drexel's outsourcing customers, has access to the same suite of Web-based services, ranging from financial and accounting to human resources and student administrative applications. All of these services run on commercial software packages hosted on Drexel's computers. It's then up to the customers to use what they want from the uniform menu of services Drexel offers under a basic application service provider model.

"Rather than customize any system to empower users, we give users access to customized tools, which they can use to develop queries," Bielec explains.

Looking ahead, Bielec says he foresees using this same architecture and business model to offer a broad range of additional services to even more mid-size universities and high schools. These could include online procurement of books, office furniture and laboratory supplies through affinity relationships that Drexel establishes with retailers that sell those types of products.

"If Cabrini wanted a CabriniBank.com, for example, it would be very simple for them to have that," Bielec says. That's because of a relationship Drexel has with Dallas-based Paymentech LLC, the vendor behind its own A.J. Drexel Bank.

"I'm basically an incrementalist," Bielec says. "I can see the possibilities, but I don't want to get sucked into the big picture."

At least one outside expert is skeptical about the viability of Bielec's vision.

"Drexel may want to spend money putting an [online] bank in, but others may not want to. The danger or the risk is of unaligned services," says Peter Bendor-Samuel, president of Everest Group Inc., a Dallas-based outsourcing consultancy.

"What we've found is that the not-for-profit shared services group simply fails," Bendor-Samuel says. "There's a necessity for ongoing investment, and the problem becomes everyone seeking to pass the buck and have someone else invest in it."

But Albert Nekimken, an outsourcing analyst at Input, a Chantilly, Va.-based market research firm, has a different take. "The lesson to be learned here is the rule of the Internet Age — that you can't predict where your competition will come from," Nekimken says. "To many IT outsourcers, it has never occurred that the university down the road would become a competitor."

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Get It In Writing

CIOs who have finally gained a seat at the table need to know what kinds of customized contracts and employment terms they should request from their companies – and the gotchas to avoid.

By Kim S. Nash

IT USED TO BE THAT ONLY corporate royalty — CEOs, presidents and chief financial officers — demanded and received customized contracts that specified employment terms and locked in juicy parting deals or "golden parachutes."

But elite CIOs who have earned the same kind of clout are now learning which terms work to their advantage and which ones don't.

Take, for example, Manny Moslemi, who was CIO at now-defunct Grand Union Co., a supermarket chain in Wayne, N.J.

A four-year employment agreement didn't protect Moslemi when Grand Union filed for Chapter 11 bankruptcy protection in October 2000. Under Chapter 11, a company's senior managers become unsecured creditors and get stuck at the bottom of the list of individuals or organizations to pay.

Some CIO contracts include provisos regarding how much severance money is due if a company must start a formal reorganization or liquidation process. A bankruptcy judge would decide whether an executive would ever see that severance, but a legal contract could at least give a departing CIO a fighting chance.

But Moslemi didn't have that kind of deal. He got nothing when Grand Union folded last March — no salary, no bonus, no health insurance.

"I learned a hell of a good lesson," he says.

On the other end of the spectrum is Wayne Sadin, former CIO at Bank United Corp. in Houston.

When Seattle-based Washington Mutual Inc. took over Bank United last February, Sadin walked away with a bundle. His contract netted him twice his annual salary and bonus and continued his health insurance. All of his stock options and other shares vested immediately. "In a 12-month period, I received 10 years' worth of compensation," he says.

Some CIOs negotiate custom contracts with unique provisions. For example, Nick Ioli, CIO at The Great Atlantic & Pacific Tea Co. in Montvale, N.J., has a clause in his contract stating that if he's asked to report to anyone other than the CEO, he can quit and receive his salary, bonus and health benefits for the next 18 months.

Sweetening the Pot

Special extras are often granted during the recruiting process as deal-sweeteners, says Beverly Lieberman, a principal at Halbrecht Lieberman Associates Inc. in Stamford, Conn., which specializes in recruiting IT executives.

Lieberman once helped broker a deal for an IT manager who insisted that the company let him use his own airplane for company travel. He was a pilot and wanted to continue flying.

LARRY SOUDE

"You never know till you ask," Lieberman says.

Sometimes there are trade-offs with these finely worded agreements. A company may restrict an executive in some way but offer a hefty monetary reward in return. Noncompetition provisions are one example of such an agreement. (See Marc Rubinger's profile, below.)

Loyalty provisions are another example. Part of Kenneth Gerhardt's contract as CIO at ConAgra Foods Inc. in Omaha calls for him to support the board's position if another company tries to acquire ConAgra. In return, Gerhardt gets guaranteed employment and compensation — plus early retirement benefits — for three years after any takeover.

Employment contracts also help balance the risk/reward ratio when taking a job at a new company, says Bruce Goodman, CIO at Humana Inc., a $10 billion health care company in Louisville, Ky.

"I know the upside potential if everything goes really well," he says. "What's the downside if things turn out to be hell? What do I want to get out of this to make my move worthwhile?"

Sometimes CIOs and chief technology officers simply participate in the standard employment contract a company offers to all senior executives.

Ron Rose, CIO at Priceline.com Inc. in Norwalk, Conn., has such an arrangement. Filings with the U.S. Securities and Exchange Commissioo show that except for salary and stock-option grants, Rose's employment agreement is the same as those of Priceline.com's CFO, chief marketing officer and others.

Dennis Jones, former CIO at FedEx Corp. in Memphis, says he doesn't like contracts that give a CIO anything beyond what other officers get. Otherwise, resentment of the CIO could emerge, he says. That's no good, given that on average, a CIO stays in a position for just 15 months.

"I do not believe a CIO should be treated as an exception. That just creates a lot of issues that, frankly, CIOs don't need to deal with," Jones says. "CIOs are already an endangered class of employee." ◗

Nash is a freelance writer in Yorktown Heights, N.Y. Reach her at kimnash2002@yahoo.com.

> I know the upside potential if everything goes really well. What's the downside if things turn out to be hell?
>
> BRUCE GOODMAN, CIO, HUMANA INC.

The Fine Print

KEY CONCEPT: Change in control — what happens to an executive when his company is acquired.

CONTRACT EXCERPT: "The company has entered into agreements with [senior] officers, including . . . Goodman . . . which for a two-year period following a change in control provide certain benefits upon termination. . . . Under these agreements, these individuals would be entitled to receive severance pay. . . by a multiple ranging from one to one and one-half."

WHAT IT MEANS: Change-in-control provisions protect an executive financially in the event that his company is acquired. In this case, Goodman could get a severance of up to 1.5 times his salary and bonuses if Humana is bought by another company and the new firm decides not to retain him. And that severance deal would apply for up to two years after Humana's ownership changed hands.

It's a pretty good bet that managers at the acquisition target aren't likely to keep their jobs with the new company. When negotiating a change-in-control provision, try to maximize all stock options, restricted stock, salary and bonuses due.

For example, if a contract calls for getting 12 months' salary when terminated in routine circumstances, a change-in-control clause might call for that salary plus a sum equal to last year's bonus, plus the immediate vesting of all stock options.

KEY CONCEPT: Consulting agreement — retaining critical benefits after leaving a full-time post.

CONTRACT EXCERPT: "The company shall . . . provide Jones and his dependents coverage under the company's employee benefit plans to the same extent that coverage existed . . . before; reimburse Jones for not otherwise reimbursed reasonable and necessary travel and lodging expenses incurred in seeking other employment; provide, at its expense, tax and financial counseling services . . . [and] use its best efforts to provide executive access for Jones and . . . family . . . to Disney World and Disneyland.

WHAT IT MEANS: When Jones retired as CIO at FedEx in August 2000 and became a FedEx consultant, he hung on to a lot of the benefits he enjoyed when he was working there full time.

In a deal that promised him $48,500 per month through December 2002, he and his family also kept their health insurance, financial planning services, high-speed Internet access and vacation entertainment.

Jones didn't complete the term; he joined Commerce One Inc. in Pleasanton, Calif., as chief operating officer last April. But except for the provision that covered his job-hunt expenses, his consulting contract didn't win him anything special, Jones says. The provisions — including the Disney passes — were in keeping with what FedEx offers all of its senior executives.

KEY CONCEPT: Noncompete provisos — what can and can't be said and done after leaving a company.

CONTRACT EXCERPT: For two years after leaving the company, the "executive shall not, except with company's express prior written consent, directly or indirectly, in any capacity . . . establish, engage . . . any person in any business in competition with company, at any location within 15 miles of any office . . . or conduct himself in any manner which he would have reason to believe inimical contrary to the best interests of company."

WHAT IT MEANS: If Rubinger leaves Genesis Health Ventures, he can't work for or help any company that Genesis Health Ventures views as a rival for at least two years. And even then, he's required not to do anything that could hurt his former employer.

The contract also prohibits him from soliciting customers or suppliers of Genesis Health Ventures and from recruiting its employees for two years.

Rubinger's contract puts a 15-mile radius on these provisions; other noncompetition agreements are more prohibitive, stipulating, say, 35 miles.

Noncompete clauses are pretty restrictive, but in return, executives often get nice parting gifts. For example, under certain scenarios, Rubinger could receive up to two years' salary, plus a lump sum equal to the value of some of his stock options, with other options immediately vesting. He would also continue to receive health insurance and other benefits for up to two years.

Dear Career Adviser

As an independent consultant, I've been asked to prepare several extensive proposals during the past several months, but I haven't gotten any new work. How should I respond to prospective clients who want extensive proposals before they hire me? — BURNED IN BUFFALO

Dear Burned:

When budgets are slim, consultants frequently complain about potential clients who request proposals but then don't respond with offers of paid work. Some clients use the proposals to benchmark competing proposals, while others use them as well-laid-out (and gratis) game plans for doing the work themselves.

To avoid being burned, follow these preproposal basics: Ask the potential client about the company's budget and budget cycle for the current year and the next, and find out how decisions to use consultants are made and who the decisioo-makers are. Also, ask about the client's time frame for making a decision and initiating work, the oumber of proposals being solicited and the staff members who will attend proposal meetings.

Never just fax or e-mail your proposal. Prepare your prospective client to meet with you face to face, and be sure it's clear that you want feedback oo your submission.

Finally, if your proposal includes a detailed analysis that a prospective client could use on its own, offer to analyze the client's needs, requirements and alternative solutions and provide documentatioo in key areas — for a fee.

If the client resists these moves, find someone else who will pay you.

Dear Career Adviser:

I have a computer science degree with a background in Java programming and databases using Oracle and Access. After graduation, I took o job on an IT help desk after looking for work for four months. I currently work in o telecommunications company as o support specialist for Internet, data and mobility faults. Now I want to know how I can move up. — MOVING UP FROM HELP DESK

Dear Moving:

In years past, you might have impressed an interviewer by working on a help desk and building Web pages for nonprofits or coding at home. However, in this market, these skills aren't good enough to compete against the talent pool of five-year Java and Oracle developers who are also available.

PEGGY GUNTER is an expert in high-tech careers and recruitment. Send questions to her at www.computerworld.com/career_adviser

Plan to spend a year or two on the help desk until the market eases, says recruiter Sam Merchant, CEO of DML Technical Resources Inc. in Oakland, Calif. During that time, learn the code behind the applications you're supporting inside out. That way, when a development job opens up, either within your company or at a competitor, you'll be ready. ▶

WORKSTYLES

Working Smarter At West Group

Carie Allen, technology manager in the applications development group at West Group, a division of Toronto-based The Thomson Corp., talks about what it's like to work at the company, which provides software for the legal industry.

Has the economy changed the way your department operates? "Employees here have taken it upoo themselves to work smarter. If there's a group of people who want to attend a conference, they choose the best person to go, and that person comes back and teaches what they learned."

Is that type of response indicative of your culture? "You read in the paper about the many companies in the Twin Cities laying off people by the thousands. And it might sound corny, but I think it's a positive reflection of a large company that has given a lot to its employees, and the employees appreciate that and are looking for ways to give back to the company."

What are the most critical business functions supported or developed by the IT group? "The technical services group houses the data repository (containing legal, regulatory and business information), maintains data integrity, manages storage and develops and deploys the Web servers. The applications group develops the user interface software, and the database group does content conversion and preparation of the data to be housed in the repositories."

How would you describe the pace of the work? "We have done some proactive things to keep it as steady as possible, such as monthly releases of software applications, not three very large releases in one year. We try to keep people balanced with routine things but also with projects that allow access to new technology."

Can you give an example? "One of our new platforms is multilingual. No one on the development team speaks Japanese, so they were out looking on Japanese Web sites and in chat rooms, talking to people across the world about how to handle different technical issues. It was something completely out of the realm of things they'd worked oo before."

What do you think makes your company's IT department unique? "Employees at all levels have the power to make a difference. That inspires people to take risks, to bring things to the table and work smarter. We also have an end-of-year discretionary bonus given to 15 employees who had exceptional contributions throughout the year."

What do you like best about how career advancement and training are handled? "We encourage employees to look not just for upward movement but also lateral movement."

What aspect of work do you look forward to each day? "I'm restless, and I tend to always be striving toward the next thing that will stump me, so I'd say the challenge of my job keeps me fired up. I'm always learning from other people and technologies I'm encountering."

What aspect do you dread each day? "If I dreaded something, I'd be out of here."

West Group

Who they are: The leading provider of electronic information software to the U.S. legal market

Main location: Eagan, Minn.

Number of IT employees: 1,300

Interviewee: Carie Allen, technology manager in the applications development group

– Mary Brandel
thebrandels@hotmail.com

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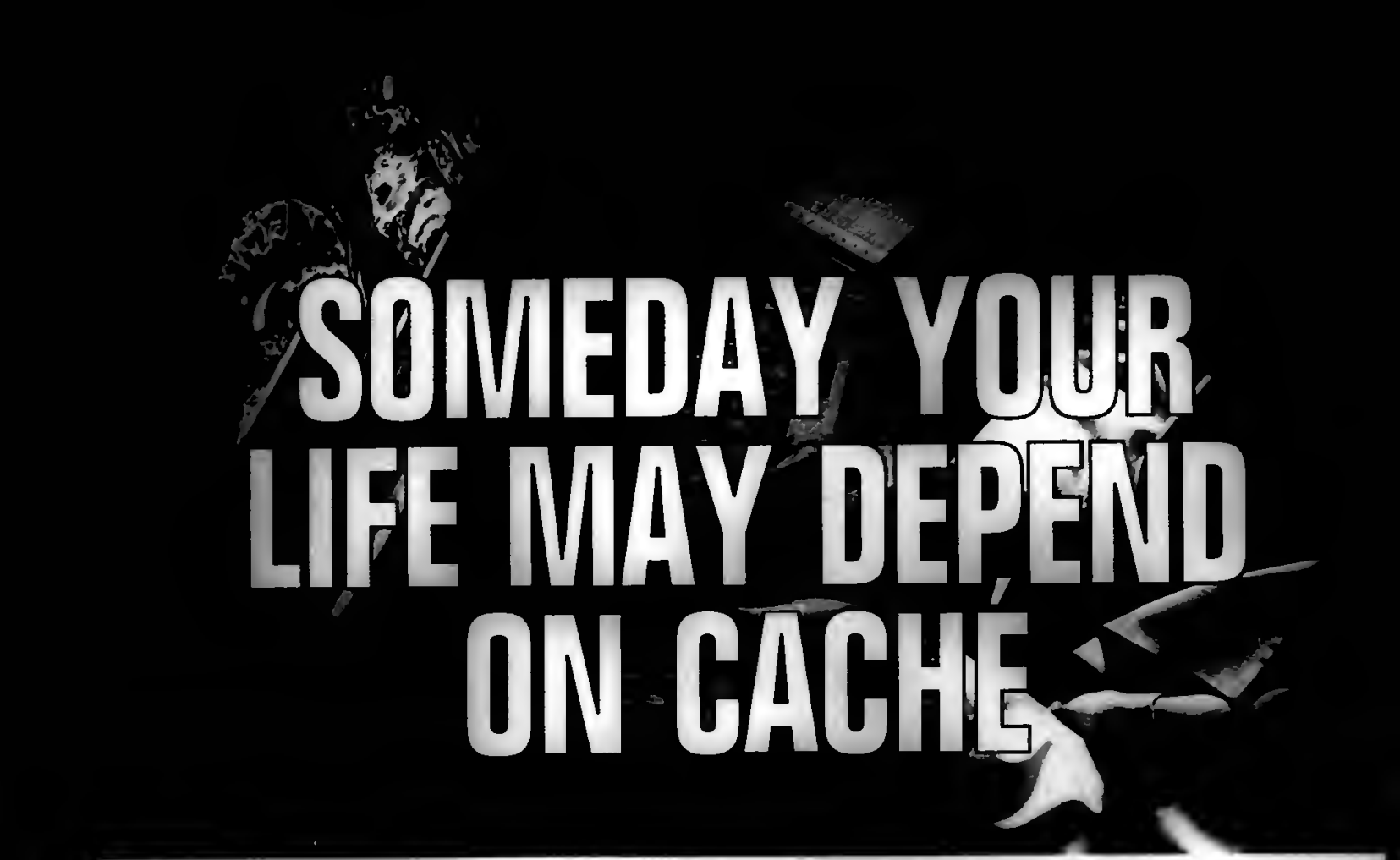

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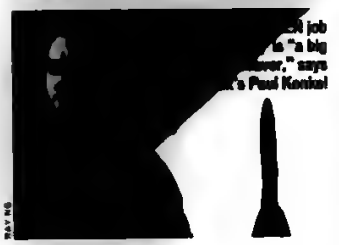
THIS WEEK



ON THE JOB

New multiplatform, XML-enabled, event-driven job scheduling tools represent several leaps forward from their venerable mainframe predecessors. PAGE 46

TRANSFORMING ENERGY

Power companies struggle to reinvent their processes with technology in an industry that's still in a state of flux. PAGE 46

FUTURE WATCH

Writing software and building computers to play board games has taught computer scientists a great deal about artificial intelligence. Now experts say new techniques for programming computers to play games are likely to find use elsewhere. PAGE 50

QUICKSTUDY

Unless it's wireless, a network exists only because of the cables that connect various computers, servers, printers and other devices. Find out what makes a cable more than just a wire in this week's primer. PAGE 52

SECURITY JOURNAL

Someone has been accessing a sales staffer's computer at night, leaving a trail of Web site addresses. Security tools identify a potential internal perpetrator, but it's human detective work that finally closes the case. PAGE 54

NICHOLAS PETRELEY

'Get Back' to IBM

A COUPLE OF WEEKS AGO, I suggested that IBM has an ace in the hole called "hardware devolution." The best way to describe hardware devolution is to examine the so-called evolution of the PC.

If the word *Beatles* makes you think of screaming teens fainting over the Fab Four, you're probably old enough to remember how the first PCs secretly invaded our workplace. "In My Life," I recall that the "Revolution" began because whenever anyone wanted something from computer services, the answer was "Don't Bother Me," "You Can't Do That" or, worst of all, "No Reply." The PC gave users the ability to circumvent computer services. Naturally, the company policy was often that, " 'If You've Got Troubles,' it doesn't matter how much you 'Twist and Shout' for 'Help.' 'Think for Yourself,' because we're not going to 'Carry That Weight.' " But we kept on using the PCs "In Spite of All the Danger," because when they worked, "A Hard Day's Night" at the PC usually gave us the answers we wanted.

Then we got on "The Long and Winding Road" of networking so that our PCs could "Come Together" to share resources, such as printers and hard drives. Computer services morphed into IT, which better described the broader responsibilities of managing all the networked desktop computers and everything stored on them. The computer room started filling up with servers. Thanks largely to "The Fool on the Hill" in the Northwest, everyone wore beepers and worked "Eight Days a Week," "Fixing a Hole" "Here, There and Everywhere." As the problems increased, so did the budgets to address them.

The demands of enterprise-scale applications, followed by the need to provide high-availability services on the Internet, meant that IT had to purchase more PC servers to handle those demands. More servers meant more components and more software installations, and IT departments had to look after "Every Little Thing."

Vendors figured, "We Can Work It Out" and make some "Money (That's What I Want)." So some vendors consolidated servers into racks, and others created KVM switches to manage several servers with a single monitor, keyboard and mouse.

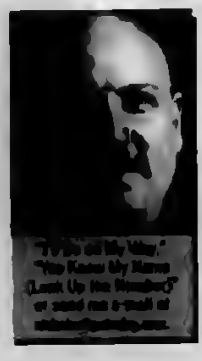
So there they were. Gobs of computing power in dozens of servers all in one rack, and no easy way to distribute and redistribute the various tasks and loads across them. There's clustering, but clustering is easy "For No One." If you can solve that problem in a hardware box, "Baby, You're a Rich Man."

Enter server blades, which are low-power server cards that you can combine on a backplane in less space than a rack. Blades are easy for just about anyone. At the low end, for $600 a pop, OmniCluster has a SlotServer you can plug into the Peripheral Component Interconnect slots in your existing server machines. One server suddenly becomes two, three, four or more. And OmniCluster runs the fastest-growing server operating system, Linux, in addition to Windows.

At the high end, you've got solutions like Egenera BladeFrame, a 96-processor box that also runs Linux. This puppy provides fail-over support for any blade, and its special control blades let you redistribute computing power in real time.

BladeFrame is pricey, starting at more than $200,000 (as of November, anyway), but considering what you get, it's probably worth every penny.

"I Don't Want to Spoil the Party" for the blade vendors, but "I've Got a Feeling" that as terrific as they are, server blades will have a limited shelf life. What is the BladeFrame? One box, many servers, reliable, real-time management of processing power. That also describes the new IBM Linux-based mainframe, which starts at approximately $400,000. The difference is that it doesn't need multiple servers. But if you do, it offers virtual servers.



I recall that Bill Gates and "Some Other Guy" named Stewart Alsop predicted a day when we'd unplug the last mainframe and replace it with a PC. "Do You Want to Know a Secret?" "I Should Have Known Better," but I used to agree. Now I'd have to say that the PC will never replace the mainframe. What PC-based servers like server blades may do, however, is devolve into mainframes. If that is indeed our future, IBM's Linux-based mainframe isn't a blast from the past, but a glimpse of the future.

A new breed of job schedulers emerges from the back office, takes the lead in tuning transaction processing. By Sami Lais

GETTING THE JOB DONE

SOME PEOPLE MIGHT SMIRK at the thought of calling job schedulers some of today's hottest systems tools. But the new breed of multiplatform, XML-enabled, event-driven job scheduling tools represents several leaps forward from the old-fashioned IT workhorses of the mainframe era.

Take a look at some of the organizations using them:

Narex Inc. in Golden, Colo., is using Tidal Software Inc.'s SysAdmiral job scheduler to automate and halve the time it takes to process credit reports.

The Wisconsin Department of Corrections in Madison used Argent Software Inc.'s Argent Job Scheduler to run jobs just 20 minutes after installing the software.

In Dallas, BMC Software Inc.'s Control-M job scheduler has let the city's data center trim a round-the-clock staff of 48 to a mostly daytime staff of 28.

"After decades of being viewed as drab mainframe tools, job schedulers have become sexy," says Patrick Dryden, an analyst at Meta Group Inc.'s Houston office.

Job schedulers were designed as simple job launchers first for mainframes, then for Unix systems. A master command would direct multiple agents to run reports, update databases and perform similar tasks at set times.

Over the years, enterprise programmers have written job scheduling policies with interdependencies. One policy might state that Job 2 (running reports) shouldn't start until Job 1 (updating a database) has run successfully. And that was about as complicated as they got.

Today, the report may run on OS/390, the database on Unix, and data changes may flow from Windows NT servers of Web-based applications.

"The conventional concept of batch job scheduling is moving from a time-driven process to an event-driven one," wrote Paul Mason, an analyst at Framingham, Mass.-based IDC, in his December report, "Event-Driven Scheduling — the Next Step in System Automation?"

With businesses running globally around the clock, a credit card company's request for a report on a delinquent account can come into Narex at 2 a.m. as easily as at noon, says Paul Konkel, IT director at Narex.

In the old, time-driven model, Narex's systems could be set to automatically begin such jobs. But monitoring and restarting failed jobs was a manual process.

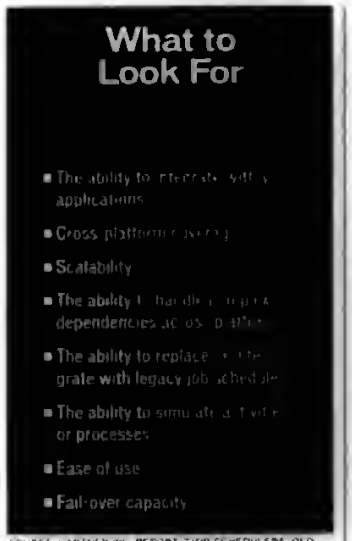
Now, the trigger for the job scheduler to start the report is receipt of the job request. And if the job should abend, or fail, SysAdmiral can look into the application and often detect why, says Konkel. If an address change was not affected, SysAdmiral can detect the problem, trigger the application to update the database and then rerun the job, all without manual intervention.

Having scanned the logs, SysAdmiral can detail conditions under which the process failed — "a big timesaver when you're trying to figure out what went wrong," says Konkel. Reports that once took 24 hours now take Narex eight to 12 hours. Two years after installing Mountain View, Calif.-based Tidal's event-driven job scheduler, that time is still shrinking, Konkel says.

"A job scheduler is one product where you can see a lot of gains from a single, simple tool," Dryden says. "You don't have to buy into a whole framework, and there's an immediate, huge return on investment."

The Wisconsin Department of Corrections was using another product when Linda Johnson took over as applications support engineer. "It's a very complicated product, more than we needed to run 30 jobs a day," she says.

She instead selected Argent Job Scheduler. Farmington, Conn.-based Argent's product is smaller and simpler than what the department had been using but offers the flexibility and reliability Johnson's predominantly Windows NT systems need, as well as compatibility with the state's mainframe and other state agency systems and applications. And support is excellent, Johnson says, an important consideration in a shop with a small staff.



SOURCE: GARTNER RAS REPORT "JOB SCHEDULERS OLD DOGS MUST LEARN NEW TRICKS" BY MILIND BOKERAR

Argent Job Scheduler automates database updates for the state's sex offender Web site, which is now available only to police but soon will be accessible by the public.

"It extracts data from our legacy system and moves that data to the mainframe," Johnson says. Offenders move an average of 2.5 times per year, so just tracking addresses is a big job, she says.

Sophisticated event-driven job schedulers are blurring the line between business-process automation and job schedulers, Mason writes.

Smartworks.com Inc., a Web-based printing company in Dayton, Ohio, uses a job scheduler from Tidal to run jobs around the clock for its Web and SQL applications.

"Tidal is scheduled to kick off internal applications at Smartworks and, in the future, our disaster recovery site," says Eric Gephart, the company's senior network recovery manager. "The next step will be for the Tidal application to run on a server; a SQL back-end [server] will be running on our storage-area network."

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"Now, when a job runs, if it abends, it has autorecovery built in," explains McFarland. "We don't have to call a programmer — Control-M restarts it."

The job scheduler underpins the city's new 311 system, which lets residents file complaints on everything from potholes to real estate assessments. The integrated system uses layers of applications — including databases, reporting programs, geographic information systems and call centers — integrates the information, and lets residents and city officials track complaints via the Web.

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will take on similar tasks for a new enterprise resource planning (ERP) system, McFarland says. "Scalability was an important issue for us," he says.

"The importance of job scheduling is very much tied to the ERP space," Masoo says.

When Honeywell Aircraft Landing Systems migrated from an OS/390-based ERP system to Glovia, a Unix-based system from Fujitsu Ltd. in Tokyo, the need for a job scheduler external to Glovia was quickly apparent to David Kulakowski, Honeywell's applications development manager.

"We didn't know until the next morning if our applications had failed the previous evening," he says.

South Bend, Ind.-based Honeywell repairs and overhauls commercial aircraft brakes. Glovia tracks and manages the servicing procedures done on wheels and brakes at repair facilities, Kulakowski says. "We have to know exactly what's been done to every part of an aircraft at all times — that's FAA requirements. If we don't, we can be fined," he says.

Kulakowski brought in SysAdmiral to manage the process flows between Glovia and applications at Honeywell's corporate data center in Tempe, Ariz. SysAdmiral does the job with information flowing bidirectionally, he says. "Locally, we don't man our IT systems in the evening now," says Kulakowski.

XML-Enabled

XML capabilities for job schedulers are also growing in importance. XML capability wasn't the first of the Tidal scheduler's features that Konkel implemented at Narex, but it's a popular one among the company's programmers.

"I can have a team of programmers design a process flow in Visio, say, theo output it in XML and use it in the Tidal job scheduler," Konkel says. XML allows the process owners to have control over the details of how their jobs run and frees Konkel's staff from having to recode the process.

"Enterprises are taking a more pragmatic perspective of their IT organizations," Dryden says. "Their expectations of the business value that IT should deliver are higher." And delivering that reliability starts with operations, be says.

Ironically, it's the old mainframe job schedulers' success at streamlining operations that can be the greatest obstacle to buying a new one.

"Eveo if a new and better one comes along, you've got so many rules in place with the old one, it's nearly impossible to tear it out," says Ray Lefebvre, Oracle database administrator at Stride Rite Inc. in Lexington, Mass.

And substituting one scheduler for another isn't always necessary.

Reuters Group PLC in London is extending its IBM and Tivoli Systems Inc. job schedulers across its distributed systems environments to "hundreds of Solaris and NT boxes," says Andrew Cunningham, manager of global management systems at Reuters.

With widely distributed sites, "we needed a tool that would work across multiple environments but that could be controlled centrally," Cunningham says. Because Reuters' systems run under Tivoli Enterprise Console, the decision to use Austin, Texas-based Tivoli's Unix and NT scheduler was a logical one, he says.

"The quest for enterprises to move to a single cross-platform job scheduler remains a key requirement," wrote Milind Govekar, an analyst at Gartner Inc. in Stamford, Conn., in his July report, "Job-Scheduling Magic Quadrant: New Challenges." But for most firms, that's unlikely to happen before 2004. ▶

Lais is a freelance writer in Takoma Park, Md. Contact her at sami_lais@computerworld.com.

Upsides and Downsides

Here's what a few IT managers say they love — and hate — about their job schedulers:

Eric Gephart
Senior network recovery manager,
Smartworks.com Inc.,
Dayton, Ohio

SCHEDULER: SysAdmiral from Tidal Software Inc.

LOVE: "When you're setting up the job, it's very granular, very detailed. But once you have it set up, it takes care of itself – you don't have to worry about it. We're using NetIQ at Smartworks; Tidal's is the only scheduler that integrates with NetIQ, which is big for us."

HATE: "The software is expensive. It's the Cadillac version of scheduling software."

Linda Johnson
Applications support engineer,
Wisconsin Department of Corrections, Madison, Wis.

SCHEDULER: Argent Job Scheduler from Argent Software Inc.

LOVE: "It's fast and easy. It took less than 30 seconds to install the software, and I had it running jobs in less than 20 minutes."

HATE: "It doesn't integrate directly with our mainframe scheduling software, but there are many work-arounds for that."

Andrew Cunningham
Manager of global management systems,
Reuters Group PLC, London

SCHEDULER: Tivoli Workload Manager from Tivoli Systems Inc. and Tivoli Workload Scheduler

LOVE: "Its fault tolerance. We use it to centrally schedule backups. If that central connection goes down, [the scheduler] on the client device will continue to operate and schedule to make sure the backups take place."

HATE: "It doesn't directly support VMS. There is an agent for Tivoli Workload Scheduler, written by Heroix [Corp.], but it doesn't have fault-tolerance capability, so we use DEC Scheduler instead."

IT Fuels ENERGY MAKEOVERS

Power companies struggle to transform themselves with technology in an industry still in a state of flux.

By Melissa Solomon

OUTAGES, PRICE CONTROLS, regulatory violations: Newspapers offer a glimpse into the turbulent world of today's energy industry.

And the future is anybody's guess, as investigations into California's energy crisis and the Enron Corp. implosion raise new questions about old assumptions.

Despite the confusion, energy companies are pushing to keep pace with competition, and many have turned to technology for help. The systems they choose vary based on their missions, but most share one attribute: flexibility to expand or contract with the industry.

"I think what you can't do is nothing. There's a price you pay because of that uncertainty," says Eugene Zimon, CIO of NStar, a Boston-based energy distribution company.

CASE 1: Info Is Power

May 1. That's when the final phase of energy deregulation is scheduled to take place in Ontario.

One of the consequences of deregulation will be to force Toronto-based Ontario Power Generation Inc. (OPG) to shift from owning about 90% of Ontario's power-generation sites to owning just 39%. As the company sells its existing facilities and purchases new plants outside Ontario, its IT infrastructure must be scalable, says Syed Mir, vice president of electricity production and corporate systems at OPG. That way, "if you sell a station, you just unplug it," says Don Gagnon, senior engineer for IT at OPG's Niagara plant.

The goal is to establish an infrastructure that lets each OPG plant be managed separately, while creating enterprisewide systems so employees at the plants and corporate offices have access to financial and operational data across the company, says Mir.

"We've always believed we were data-rich but information-poor," he says.

That's where Chicago-based Industrial Peer-to-Peer LLC's eDNA data historian suite comes in. OPG already piloted the system at its Niagara site, and it is now implementing it at its largest hydroelectric and fossil-fuel sites. The next step for eDNA will be to integrate plant equipment data with maintenance and planning systems.

The eDNA suite compiles historical and real-time data about plant equipment and systems operations, analyzes that data and presents it in customized formats via client servers or the Web. It provides a central data repository using a standard format that can be viewed by anyone at OPG.

Graphical displays present the existing plant conditions, such as temperature and steam pressure, as well as the optimal conditions and the deviation between the two. That data, which is updated in real time, is tied to financial systems, providing information about average losses for the year to date, as well as projected losses if conditions are left as they are. So, for instance, OPG can determine the commercial value of the water that's being spilled at a plant, says Gagnon.

Because of eDNA's data compression tool, OPG can store lifetime data on its intranet, Gagnon explains. During the pilot, OPG was able to store 12,000 points of data in up to two-second intervals using only 8GB to 10GB.

"Our power stations are massive facilities spread across a massive territory, and eDNA is a way of seeing what's happening in that massive system at one time," says Barry Walchuk, manager of systems integration at OPG.

But eDNA is just one piece of the puzzle for OPG as it shifts to a newly competitive environment. It has recently installed a variety of financial risk management tools, including billing and customer relationship management systems, says CIO Dietmar Reiner.

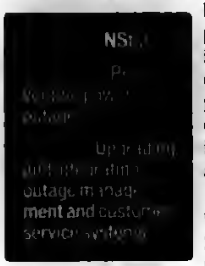
OPG spun off nearly 600 of its IT staff into a separate company called New Horizon System Solutions. Now, OPG (and its new competitors) will be able to buy support from Pickering, Ontario-based New Horizons based on need.

"In terms of getting where we need to go, we will never get there, because that would mean that you're stagnant," says Reiner.

CASE 2: IT Overhaul

It's been more than six months since the heat wave that left tens of thousands of Boston-area businesses and residents without power for days, and the Massachusetts attorney general is still fighting to levy a $22.5 millioo fine on NStar. He charges that the outages were due to negligent maintenance on the part of the utility. But it's not just customers, regulators and politicians who came down hard on NStar.

After completing an internal audit, "we didn't like what we found," says Eugene Zimon, who was hired as NStar's CIO after the outages. Since then, Zimon has developed a multiyear plan to overhaul NStar's IT infrastructure. The proposed changes are aimed at improving outage management, customer service, metering/billing and work-management processes.



To be effective, the systems must be separate components so they can adapt to change but also be integrated with one another, Zimoo says.

He has set June 1 as a target date for the first of his goals for 2002: reducing outage restoration time and customer minutes lost by upgrading NStar's outage management system. The idea is to automate and integrate all the pieces: the customer informatioo system, the outage management and trouble-dispatch systems, the geographic information system (GIS) and the supervisory cootrol and data acquisition (SCADA) system. In December, Zimon selected Fairfax, Va.-based webMethods Inc.'s enterprise application integratioo tool for the project.

Ideally, when an outage report comes into the call center, it gets routed to the outage management system. The system then integrates the GIS (which is used to maintain maps of NStar's electric distribution network) with customer information to analyze the call pattern and determine the location, and possibly the cause, of the outage. Meanwhile, the SCADA system, which monitors the network, provides real-time updates to the outage management system to advise of any changes in the operating condition of circuits. Once the location is determined, a trouble crew is dispatched to assess the problem and determine the corrective action and needed resources.

When power is restored, the customer information center is notified so it can inform customers that the problem has been fixed. Finally, a corrective work order is issued for long-term maintenance needs and to update records, says Zimon. "If one of those links is broken, we've got to fix it," be says.

Zimon's next goal is to improve customer service and billing. He has started installing a customer interaction center that will serve as NStar's multichannel front office, with integration to back-office billing and midoffice provisioning systems.

Such changes are inevitable for an industry that's just starting to understand the dynamics of competition, says Ethan Cohen, an energy analyst at Boston-based Aberdeen Group Inc.

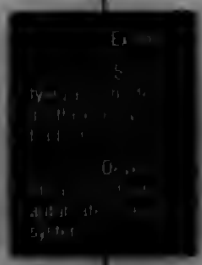
"There's just too much at stake in terms of creating shareholder value," be says.

MICHAEL EMERSON

CASE 3: From Chaos to Calm

As industry pioneers, Chicago-based Exelon Corp.'s energy traders had to create their own techniques for operating in a complex, time-sensitive business.

Their jury-rigged techniques worked, but just barely. Traders knew to push the scroll key 10 times, for instance, to get where they needed to be on their screens. Fluctuating rates, available transmissions and market rules were stored inside their heads. If a number was transposed when recording a transaction or a price was misquoted, the deal would be voided or Exelon would face penalties from regulators, says Blake McLaughlin, an IT project manager at Exelon Power Team in Kennett Square, Pa.



"It's amazing we made money during this time," says Power Team spokeswomen Caryl Sabine. "It's really a testament to the traders," adds Ron Swartz, who led the effort to overhaul the trading platform.

In 1999, Swartz started shadowing traders to see how IT systems could automate and simplify their work. Traders worked on a fixed hourly schedule, explains George Barnes, a trader who teamed with Swartz on the systems development team. The first 20 minutes of the hour were spent making calls and lining up trades. The next 20 minutes were spent coordinating the transmission of power. The final 20 minutes were spent lining up the next hour's deals and straightening up loose ends.

It was chaotic, says Swartz. After more than a year of brainstorming with traders, Swartz worked with McLaughlin to find commercial automated trading software, with no success.

But there aren't canned solutions available, says Michael Erden, vice president of IT at Exelon's generation division. "Eight years ago, this industry didn't exist at all, and the rules are changing all the time," he says.

In July, Exelon Power Team rolled out its homegrown VizTrade system, which holds the data once stored in traders' heads and lets them point and click on a screen to transact energy trades.

VizTrade is linked to the traders' telephones, so when they call a company, all of that company's data automatically pops up on the screen and thus it doesn't have to be re-entered for each deal. From there, VizTrade presents a bubble map (created with East Windsor, N.J.-based Infragistics Inc.'s Interact Control software) showing sites of major utilities and routes that power can travel. The system automatically defaults to commonly used routes to save time.

With VizTrade, deals can be made within seconds, and traders can get started scheduling and transmitting energy immediately, rather than waiting until all the deals have been lined up during that first 20 minutes. The system operates in a real-time distributed environment, so that as traders make deals, that information is updated instantly throughout Exelon's offices, says Swartz. Color-coded circles tell traders whether a market is open, a deal is in progress or a trade has been closed. "Your first day, it's just connect the dots," says Barnes.

Previously, it could take six to eight months to train a new trader, says Joe MacCrory, a trader who also worked on the system development team. Recently, with VizTrade, an intern was conducting trades after a five-minute tutorial.

In addition to simplifying the process, VizTrade has multiplied the number of trades conducted. The return on investment can conceivably be realized on a busy summer day, says Swartz.

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NStar

Preventing power outages

Upgrading and integrating outage management and customer service systems

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EXELON POWER TEAM'S revamped trading platform has helped it become more effective, say traders George Barnes (left) and Joe MacCrory, shown working with software developer Ron Swartz

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Exelon

Simplifying and shortening the energy trading process

Developing a homegrown automated trading system

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GAMES COMPUTERS PLAY

Computer game research represents a success story in the checkered history of artificial intelligence. By Gary H. Anthes

AN AUDIENCE WATCHES GARRY KASPAROV on a TV screen contemplating his next move against Deep Blue, IBM's chess-playing computer, during the second game of their six-game rematch on May 4, 1997, in New York. After this game, it was Man 1, Machine 1, but Deep Blue took the sixth game and the match on May 11.

ARTIFICIAL intelligence (AI) is a discipline that soared on the wings of optimism in the 1960s and 1970s, only to fall into disillusionment and even disrepute in the ensuing years. But in that time, AI has triumphed in a realm few people think about or take seriously: computer game-playing.

The biggest victory for game-playing computers was in 1997, when IBM's Deep Blue defeated world chess champion Garry Kasparov in a six-game match. The supercomputer, consisting of 512 specially designed chips, could consider 200 million moves per second, vs. about two moves per second for Kasparov's wetware.

Deep Blue's tour de force was the culmination of an eight-year, multimillion-dollar research project at IBM that led directly to advances in chip design, parallel-processing techniques and algorithms. That research continues as part of IBM's $100 million Blue Gene project, which during the next decade will build a machine operating at 1 quadrillion floating-point operations per second (1 petaFLOPS) to attack problems such as protein folding, molecular dynamics and drug design.

Writing software and building computers to play board games has taught computer scientists a great deal, and it has taught the artificial intelligentsia much about AI. Now research is heading in new directions, where experts say new techniques are likely to find applications elsewhere.

Jonathan Schaeffer, a computing science professor at the University of Alberta in Edmonton, uses games to aid his AI research. He developed parallel-processing algorithms to search a database of 1 trillion checkers positions, and those same algorithms found their way into commercial products for gene sequencing at a company he co-founded, BioTools Inc. in Edmonton.

Schaeffer says researchers once believed that the way to make computers play chess was to build into them the same expert rules and insights that the best players use.

"They tried to simulate the human brain, but they quickly discovered that, boy, that's really tough," he says. "The innovation was, 'If we are not smart enough to tell the computer what chess positions to look at, let's just look at them all.' " This "brute-force search," previously disdained by AI workers, proved to be the silver bullet. Today, the technique populates commercial optimization programs, Schaeffer says.

Research is now moving from games where raw searching is the answer, as it proved to be in chess and checkers, to those where that doesn't work well. For instance, in card games, there are too many combinations to consider and players don't know what cards other players have. Another example is a poker-playing program at the University of Alberta that uses a Monte Carlo simulation to assess the probability of various outcomes and neural networks to analyze the betting and bluffing history of opponents.

"We can generalize this technology so it has wider applicability," Schaeffer says. "For example, there are complex auctions with many players and interactions. How much should I bid? What are the benefits to me, and what if I don't get it? Who am I bidding against? Bluffing and misrepresentation are critical issues in everyday dealings."

Meanwhile, AI research is seeking to advance the state of the art in interactive computer games of the sort that populate teenagers' bedrooms.

John Laird, a professor at the University of Michigan in Ann Arbor, is "hooking up AI systems" to commercial games such as Raleigh, N.C.-based Epic Games Inc.'s Unreal Tournament so that characters in the games behave more realistically. "The idea of having intelligent characters in training and education is a big thing," Laird says. He has a contract with the U.S. Department of Defense to develop AI-based game techniques as replacements for expensive flight simulators and the human operators who are used to train fighter pilots.

Laird's brother-in-law is an actor who works part-time at Northbrook, Ill.-based Allstate Insurance Co., where he helps train agents by posing as an indignant customer demanding more money for claims. "You could create these kinds of training environments with AI systems instead of my brother-in-law," Laird says.

AI RESEARCHERS USE GAMES LIKE Unreal Tournament to develop humanlike characters for training and education applications.

Quick Link For access to this article and additional information on computer games research, visit our Web site: www.computerworld.com/q?27337

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The Cables That Bind

BY MICHAEL MEEHAN

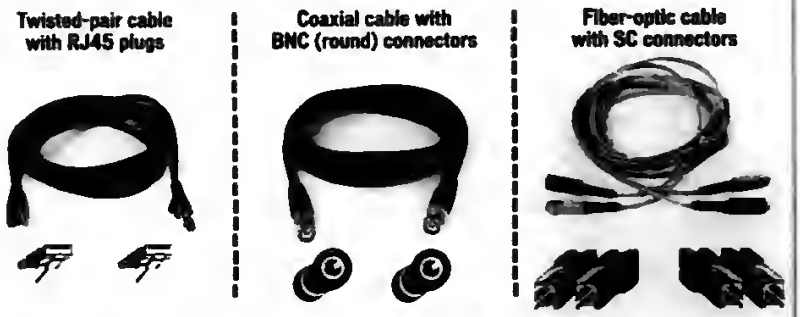
THESE DAYS, it seems as if the world is tied together with network cable.

Although we may take a wired world for granted, the consequence is that we rely on wires to connect us to anything and everything we do. There are three types of cabling systems in use: twisted pair, coaxial and optical fiber.

DEFINITION

Unless it's wireless, a network exists only because of the **cables** that connect the various computers, servers, printers and other devices. But a cable isn't just a wire — it has to meet certain specifications if the network is to function properly.

Network Cables



Twisted Pair

Twisted-pair cable is the traditional wiring used by telephone companies: Two insulated copper wires wrapped around each other. Each pair carries information via differential signaling (also known as balanced input), wherein the desired signal generates equal but opposite currents in the two wires.

The twisting keeps the two wires as close together as possible so both wires experience the same total amount of interference. If the wires simply ran parallel, they would be significantly more susceptible to noise and interference.

Twisted-pair cables come in different categories. Lower-end categories are used primarily in homes, and higher-end categories are used as a cheaper alternative to coaxial cable in LANs.

Twisted-pair cables can be bundled inside a larger cable. This allows for phones, modems, Ethernet and the like to be wired using only one cable. The smaller twisted pairs are often color-coded to denote their use. The bundled cables can also be shielded using a rubberlike covering, often for business uses. This is known as a shielded twisted pair.

Coaxial

Invented in 1929, coaxial cable was used when AT&T Corp. built its first cross-continental transmission system in 1940.

Coaxial cable (called "coax") is best known from the cable TV hookups in homes. Like twisted-pair cable, coax involves two copper-based channels that carry signals. The difference is that both channels are contained in a single wire.

The central copper wire is surrounded by a layer of insulation. Around the insulation is a braided copper mesh channel, and around that is the outside insulation for the wire.

Coaxial is considered a sturdier design than twisted pair, but it also costs more. Telephone companies sometimes use coaxial cables for the wiring into their central offices, but twisted pair is used more often. Business uses include corporate Ethernet and LANs. Like twisted-pair cables, coaxial can also be bundled in larger cables.

Optical Fiber

With optical fiber, light pulses are sent along a glass or plastic fiber, avoiding electromagnetic interference and the need for retransmission that occurs with copper wire.

While fiber can carry much more information than copper, light pulses dissipate over long distances. To solve this problem, a repeater is used to receive a signal, amplify it and retransmit it along the next leg of the cable. Analog signals hold together better than digital signals, so analog repeaters can be placed up to 18 kilometers apart (a little more than 11 miles). Digital repeaters must be closer together, typically two to six kilometers (one to four miles), but they can purge unwanted static from the signal, whereas analog repeaters pass along any static or interference.

In a fiber-optic network, a repeater consists of a photocell, an amplifier and an LED or infrared-emitting diode. The diode fires the signal along the next segment of its trip.

For longer distances, something called single-mode fiber is used. This cable carries a single ray of light to ensure that a signal reaches its intended destination. Single-mode fiber is commonly used in long-distance phone lines.

Multimode fiber sends multiple rays of light concurrently and is used for shorter distances. Multimode has a larger core than single mode, and rays are sent along at slightly differentiated reflection angles within that core.

Glass fiber also requires a thicker coating for physical protection than a copper wire. Repeaters, thicker coating and labor-intensive installation all drive up the cost of optical fiber, which is one reason why it's not normally used to connect local customers to a telephone company branch office despite the fact that it can carry a greater amount of information. [For more on optical fiber, see "Optical Networking," Knowledge Center: Enterprise Networking, Jan. 21.]

Connectors

We can't talk about cables without mentioning the plugs that allow us to connect them to devices. Each type of cable uses several different types of connectors, and standardization of these connectors is as important as the cable standards themselves.

Twisted-pair cables can have many different types of connectors. The two most common are Registered Jack (RJ) 11 and RJ45. RJ11 connectors are commonly used in U.S. telephones with four or six contact points. RJ45 connectors are similar but wider, with eight contact points, and are generally used in heavy-duty computing environments.

Coaxial network cables generally use Bayonet Neill-Concelman (BNC) twist-lock connectors.

The most common fiber-optic cable connectors are ST (a twist-lock device), FC/PC (which screws on) and the snap-in SC.

QuickLink

■ For a complete list of Technology QuickStudies, visit *Computerworld.com* at www.computerworld.com/q/Tq3000

■ For details on the types of twisted-pair cabling, visit our Web site www.computerworld.com/q/TZ7007

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The Strange Case of The Phantom Intruder

Could unauthorized activity be an inside job? Vince investigates — and finds an unlikely culprit

BY VINCE TUESDAY

DURING THE PAST year and a half, I've written about many of the ups and downs of being an information security manager. I've been open about most issues, but I've never mentioned one big event because — until recently — we hadn't resolved it.

About a year ago, we detected unauthorized access to an internal system. The attack could have been carried out only by an insider or by an external attacker who had working internal credentials.

SECURITY MANAGER'S JOURNAL

It started one morning when a sales staff member came in to find that her desktop had changed overnight. She'd left her machine locked using a password-protected screen saver, but when she returned in the morning, her e-mail client was open and her browser had been taken to AltaVista Co.'s Web site.

At first, we didn't believe her. We receive a small but regular number of alerts from staffers who think that the slightest unusual machine behavior proves that an evil hacker has taken over their machines. We have a physical access-control system that requires magnetic swipe cards at all doors in our building, so it's unlikely that an unauthorized person could have gained physical access to the user's system.

Our initial hypothesis was that the user had left her screen unlocked or had opened the applications herself before she left.

Because all Web access goes through our proxy server, we can trace activity back to a user and a desktop and extract the time of access from our logs. We use a proprietary screen saver that downloads news items from the Web and displays them on locked screens.

Our Web logs told us that the screen saver had been started at 6:03 p.m. The card-swipe system recorded the user leaving at 6:13 p.m. The Web logs showed that the AltaVista Web site had been accessed at 11:46 p.m. So the user hadn't left her screen unlocked, nor had she opened the applications herself.

We tried to think of possible explanations and kept coming up empty-handed. We knew it couldn't have been the victim, unless she was involved in a conspiracy with accomplices helping her fool the card-swipe system. But why would she notify us if she had carried out the attack?

I gathered my team to brainstorm possibilities. Perhaps someone had her password and unlocked the machine. Maybe the machine had some kind of Trojan horse code installed. We swapped out the machine for a new one and created a forensic image of the hard drive before reformatting it. We searched the image but could find no known Trojan horses.

Had we been convinced that it was a Trojan horse, we would have called in law enforcement. They have access to a database that contains the "fingerprints" (called MD5 hashes) of a large number of known files, including vendor-provided fingerprints of all of their software files. By excluding all the known Microsoft files whose signatures matched the fingerprints in the database, we could isolate any Microsoft files that had been tampered with.

But we didn't want to lose control of the investigatioo — or risk damage to our organization's reputatioo — so we put aside that line of investigatioo and interviewed the user again to see if she might have done anything to annoy her co-workers.

During that interview, the user mentioned that she shared her password with her teammates.

We shook our heads and shut down the investigation.

Obviously, one of the other staff members had unlocked the machine at some point. We could take our work no further. Instead, we helped the staffers set up a central file share so they could make their public files accessible to one another without sharing desktop accounts.

But a mooth later, the user was back. It had happened again: This time, *www.thesource.compaq.de* had been opened, along with her e-mail. She swore that only she knew the password, so it must have been someone malicious.

We considered adding a keyboard sniffer to log keystrokes so we could tell if the abuse came from the keyboard or a piece of running code. Unfortunately, the user was using a Compaq Universal Serial Bus (USB) keyboard instead of a standard PS/2 connector, so that was impossible.

Closing In

The attacker struck again a few weeks later, and this time, we got our first real bit of luck. By linking the times the suspicious usage had happened to the swipe-card records, we could find the 10 to 20 people who had passed through the area each time. Only one name was on all three lists.

We had him! An employee of our contract cleaning company had been in the room during every incident. He had the opportunity. Now all we needed was a motive.

We called in physical security to arrange an interrogation of the suspect while I searched around the user's desk to see if the cleaning worker could have found any notes with passwords writteo on them that would have allowed him access to the user's account.

But there was nothing next to or under the system and its rather sleek, black keyboard. The keyboard — that was it! I grabbed my phone and canceled the interrogation. The service worker was guilty of nothing other than being the only cleaner to do such a good job.

What had I noticed? Compaq keyboards have a series of buttons along the top. Called "easy access" buttons, they serve as shortcuts to commonly visited Web sites, like *www.altavista.com* and *www.thesource.compaq.de*, and to the user's e-mail client.

The cleaner simply brushed against these buttons while cleaning the keyboard. Although the workstation was locked, these keys still bypassed the security lock and launched the Web sites and e-mail clieot. (Compaq has since issued a patch.)

Once again, the threat came from neither insiders nor malicious Internet attackers, but from IT vendors too keen to add new features.

THISWEEK'SGLOSSARY

MD5 hashes: RSA Security Inc. in Bedford, Mass., created the MD5 algorithm as a means to secure encrypted communications. The National Drug Intelligence Center (NDIC) in Johnstown, Pa., uses the HashKeeper forensic database to establish a unique 128-bit identifier that creates a signature for specific, known files.

LINKS:

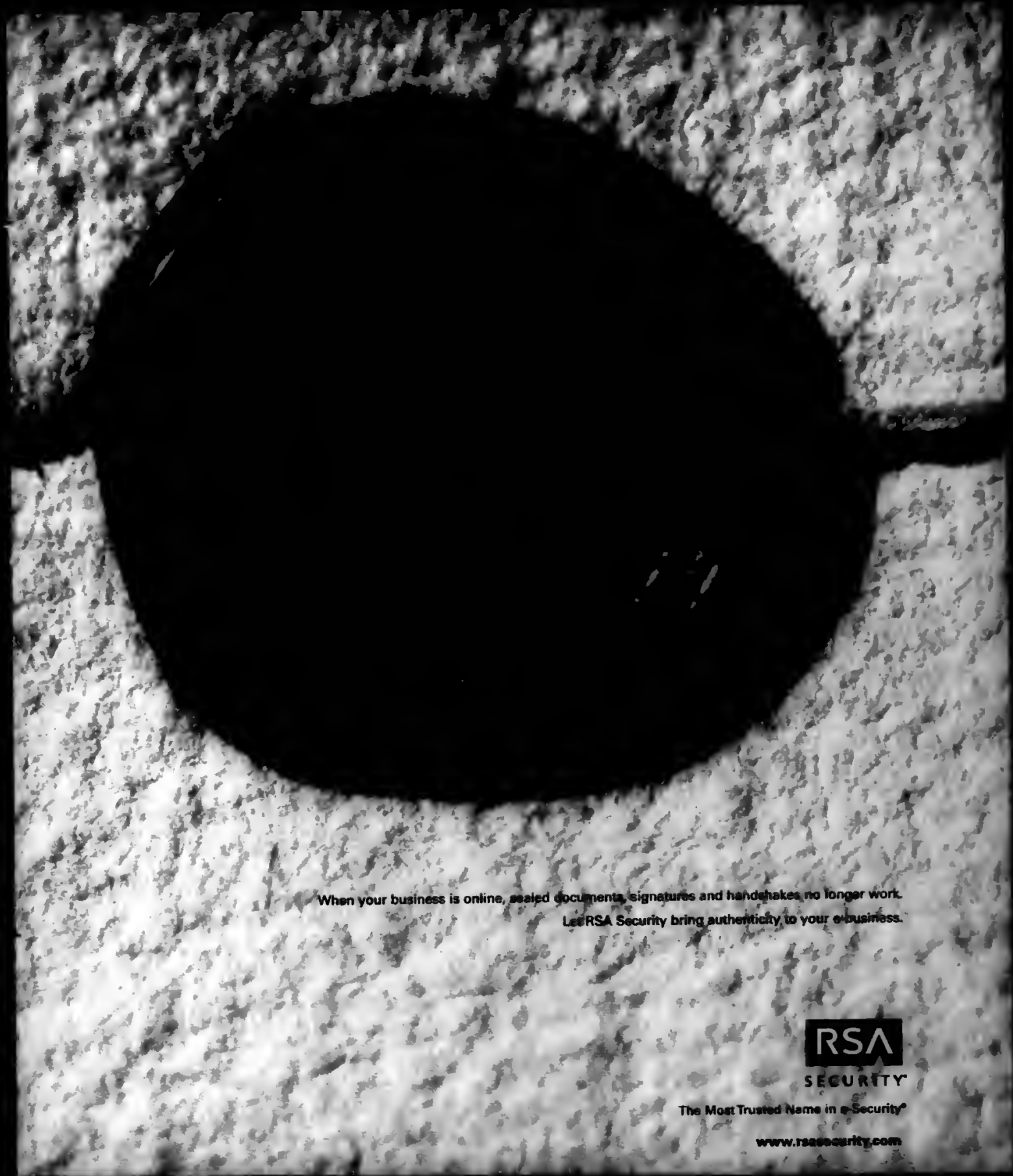
www.gocsi.com/praiss/000321.html: Is it an inside job? In the San Francisco-based Computer Security Institute's "Computer Crime and Security Survey," 70% of 538 respondents cited their Internet connections as a frequent point of attack - but 31% also cited attacks coming from their internal systems.

www.hashkeeper.org/: The NDIC's HashKeeper Web site has established a Microsoft Access database of unique identifiers, or "hash values," of known files for forensic use. Unfortunately, the database is available only to law enforcement authorities.

www.keyghost.com/: Christchurch, New Zealand-based KeyGhost Ltd.'s keyboard sniffer records keyboard activity. It would have been useful in my investigation, but it works only with keyboards using a PS/2 connector, not the USB device attached to our Compaq systems.

Quick Link: Discuss this week's column and catch up on the latest security developments online at www.computerworld.com/q?v2000

■ This week's journal is written by a real security manager, "Vince Tuesday," whose name and employer have been disguised for obvious reasons. Contact him at vince.tuesday@hushmail.com or go to the Security Manager's Journal forum.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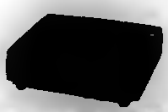

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Play a key role creating IT solutions to enable achievement of business goals. Interview users and conduct feasibility studies to determine system specifications, then implement testing and ongoing evaluation of solutions. Responsibilities range from promoting efficiencies within client business areas to facilitating workflow within IT.

Project Manager

Manage multiple IT projects such as business applications, architecture, data marts, operational data stores and infrastructure. Take responsibility for the complete project lifecycle from developing tactical and strategic approaches to cost/benefit analysis and risk assessment.

Web Application Developer

Analyze requirements, design and program applications for Enterprise e-Business projects, working closely with consultants, business analysts and other developers. Applications will primarily be deployed on WebSphere servers running on AIX platforms.

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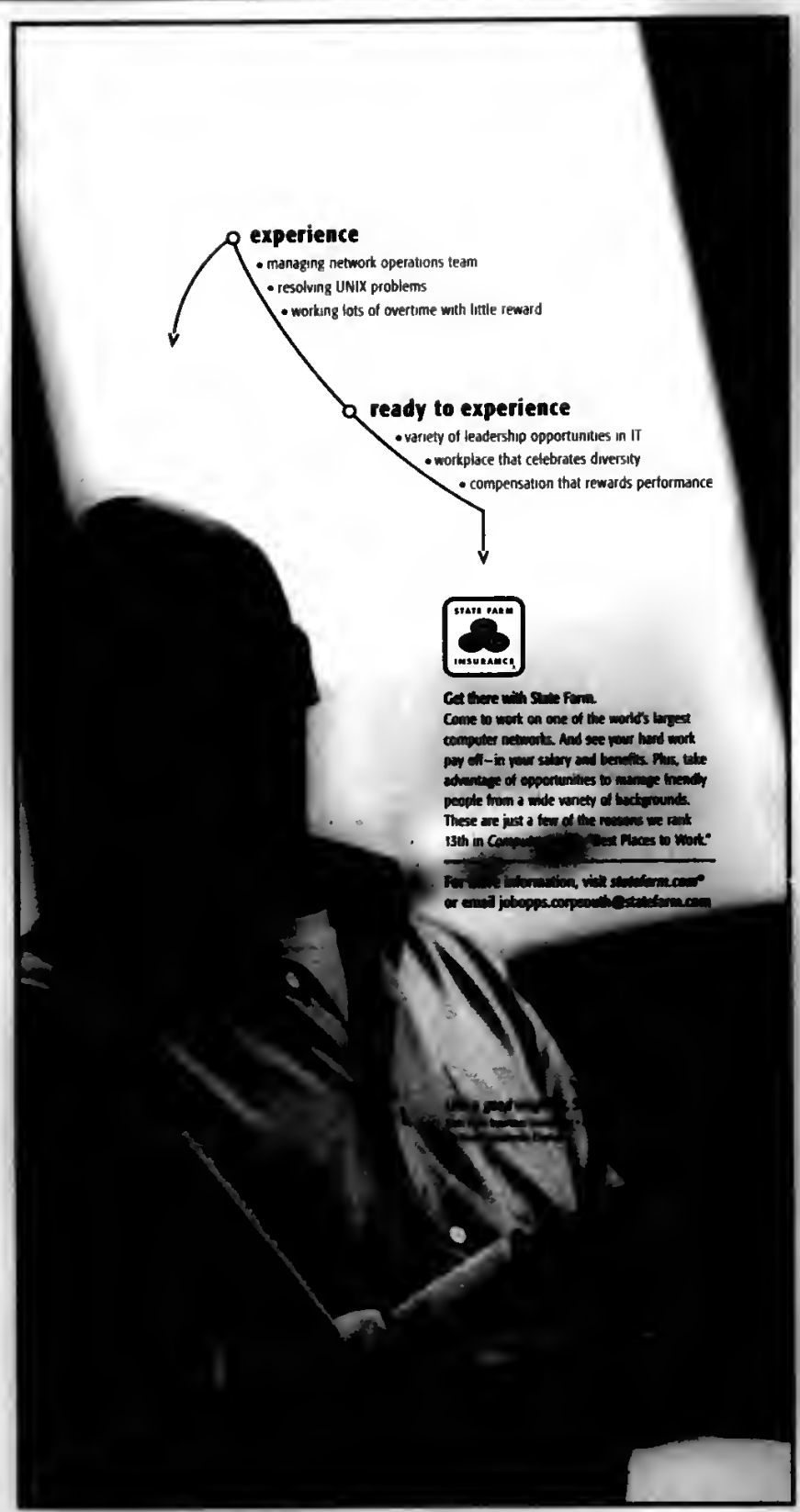
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Σ Database Administrators
--Administrate telecomm databases for conversion & migration projects. Req. 3 yrs. exp. as database administrator or database analyst. Must have exp. w/4GL, VMS, X.25, & telecomm projects.

Σ Systems Analysts
--Design, develop, analyze & test new & existing functionalities for telecomm software solutions. Req. 2 yrs exp as systems analyst or programmer/analyst or systems engineer. Must have exp. w/Ingres, COBOL, DB2, VSAM, Oracle and telecomm projects.
--Analyze design, code & test general interfaces & 3rd party interfaces for telecomm customer care. Req. 2 yrs exp as systems analyst, programmer/analyst or software engineer. Must have exp. w/Ingres, Oracle, C and either Tns+ or UNIX and exp. w/telecomm projects.
--Analyze existing & proposed telecomm systems to improve production or workflow as required. Req. 2 yrs exp. as systems analyst or in a software development occupation. Must have exp. w/COBOL, Oracle, SQL & UNIX acquired through education or employment.
--Analyze, test & implement telecomm software systems including HP UX and high availability configuration. Req. 2 yrs exp. as systems analyst or in a software development occupation. Must have exp. w/Ingres, Tris & Oracle & exp. w/telecomm projects.
--Code, review, test & implement telecomm software at client sites. Req. 2 yrs exp. as systems analyst or in a software development/consulting occupation. Must have exp. w/COBOL, JCL, DB2 & VSAM.
--Develop, test & maintain batch jobs for telecomm software, including environmental setups. Req. 2 yrs. exp. as systems analyst or programmer. Must have exp. w/either Ingres, C, COBOL & UNIX or with Ingres, Oracle & SQL. Must have telecomm project exp.
--Analyze database access patterns for telecomm billing software. Req. 2 yrs exp. as systems analyst or in a software development occupation. Must have exp. w/Ingres, Tris, COBOL, Perl & telecomm project exp.

All above positions require a Bachelor's Degree in Computer Science, Math, Physics, Engineering or a related discipline.

Σ Jr Systems Analysts
--Under supervision of Sr Systems Analyst produce flowcharts & program specifications for telecomm software. Req. Bach. Deg. in Comp. Sci, Econ. Eng'g. or a related discipline & exp. w/Visual Basic through education or employment.
--Provide tech support to back-end development team in creation of tools, procedures & documentation. Req. 2 yrs. college study in Eng'g, Comp. Sci., Electrical Sciences or a related discipline & 2 yrs. exp. as jr. systems analyst or programmer/analyst. Must have exp. w/ COBOL, JCL, DB2 & VSAM.

Due to the unpredictable growth of the telecommunications industry, candidates for all positions listed must be willing to temporarily relocate to client sites throughout the U.S.

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FT Manager of Software Development. Multiple positions. Responsibilities include: Manage the design, development and implementation of data base architecture and client/server systems supporting banking and financial industry software; manage the design and development of financial fund transaction networks and messaging services utilizing SWIFT protocol; FIN services, Middleware, FED, CHIPs and MO series, manage the design and development of UNIX- and Windows NT-based database applications and database libraries utilizing Oracle Pro C, SQL, C++ and Java; and manage 6-8 Software and Hardware Engineers and other computer professionals. Must have an MA/MS or its foreign/educational equiv in Comp. Sc., Engineering or a related field and 3 years of exp. as a Software Eng., Sys. Analyst or a related occupation, or a BA/BS or its foreign/educational equiv in Comp. Sc., Engineering or a related field and 5 years of progressive exp. as a Software Eng., Sys. Analyst or a related occupation. Must be willing to travel domestically and internationally to client sites and to parent company in Israel, as needed. Salary: $98 400 per year and up, commensurate with experience

FT Software Eng. Multiple positions. Responsibilities include: Design, develop and implement web-based transaction processing software products, middleware and distributed databases for the banking and financial industry; utilize UML, MFC, ATL, WLE Tuxedo, CORBA, MQ Series, JAVA, ActiveX, DHTML, XML, JavaScript, Active Server Pages, HTTP, SSL, COM, C++, Oracle, SQL, Rational Rose, Booch, Symantec Cafe, JDBC, RMI, Domino WebServer, Lotus Notes 4.5, Win NT and 95 family and Unix; to lay the foundation and structure the design for four tier products. Must have a BA/BS in its foreign/educational equiv in Comp. Sc., Engineering or related field and 3 years of exp. as a Software Eng., Sys. Analyst or a related occupation or an Assoc. Degree or its foreign/educational equiv in Comp. Sc., Engineering or related field and 5 years of exp. as a Software Eng., Sys. Analyst or a related occupation. Must be willing to travel domestically and internationally to client sites and to parent company in Israel, as needed. Salary: $72,000 and up, commensurate with experience. If interested, submit resume in duplicate to:

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Business Analyst Supervisor. Plan and organize new product, conversion and other work unit projects and activities; meet with client management to identify and define business purpose and requirements for major products, new systems, policy changes or related products; monitor status of project activity and data processing requests to ensure that deadlines are met; review programming specifications to determine the impact of requested changes on other systems, programs and procedures; supervise the activities of subordinate work units (e.g. client services, technical support, roamer processing, interexchange processing); evaluate programming and operational needs of work units to enhance effectiveness; evaluate system updates or enhancements; and review budget reports and prepare forecasts to project expenses and revenue. Requirements: bachelor's or foreign degree equivalent in business administration engineering, or computer science plus four years of project management experience. Salary: $68 461. 40 hrs/wk, M-F 8:00am - 5:00pm. For consideration please forward two resumes to North Metro Job Order #GA 7051404, 2943 N. Druid Hills Rd. Atlanta, GA 30329 or the nearest Department of Labor Field Service Office

Applications Programmer needed for Coral Gables information technology consulting firm to convert data from project specifications and statements of problems and procedures to create computer programs. Min req: Bach degree in computer science plus 2 yrs exp. Send resumes to SA Consulting LLC 2121 Ponce de Leon #620 Coral Gables, FL 33134

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Duties include using knowledge of Engineering & business understanding of planning & scheduling concepts with such computer software/techniques as SQL & Oracle8, demand planning & forecasting, to install company products, such as FactoryWorks & eDapter, which allow better manufacturing automation for our clients. M.S. in Industrial, Mechanical or Electrical Eng. or related or B.S. + 5 yrs. exp. in application development acceptable in lieu of M.S. Ability to use C, C++, SQL, Oracle8 Travel required. Positions Available. Multiple. 40.0 hr/wk. 9:00 - 5:00

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Plan, develop, test, and document computer software for ERP application using BPCS software including evaluation of user requests, consultation with clients and providing technical assistance and training to users. Must have a minimum of four years experience. Send resume to: HR JGI 201 West Passaic Street, Suite 300, Rochelle Park, NJ 07662.

Software Engineer Atlanta: Develop, support & enhance of web based collaborative software tools in Unix & NT environment, integrate legacy systems, using Java, XML, DHTML, DCOM, EJB, JSP Servlets, OOD-OOP. Req. BS in comp sci or engg & 3 yrs exp as a programmer, analyst, or eng & knowledge of J2EE. Resumes S. O'Toole, MediaOcean, 250 14th St, NW 4th Fl Atlanta, GA 30318.

Data Process Programmer/Lead Analyst – design, develop, test, maintain & implement the Maryland Business Entity System using knowledge of & exp. w/ DB2, COBOL, CICS, IBM Mainframe & Xerox Printing Solutions. Requires B.S. in computer science, information systems, engineering, math or physical sciences plus 5 years progressive exp. Mail resumes to Dept. of Assessments & Taxation, Attn: Personnel Administrator, 300 W. Preston Street, Room 811, Baltimore, MD 21201. 40 HR/WK. HRS 8:00-5:00.

Network Administrator needed for Miami telecommunications provider to monitor data communications network to ensure availability to all systems users and to resolve network problems. Min req: 2 yrs exp. Send resumes to Business Technology Services, Inc. P.O. Box 310426 Miami, FL 33231

Network Administrator needed for Miami travel consulting firm to monitor data communications network to ensure that network is available to all systems users. Min. req. 2 yrs. exp. Send resumes to BR Online Travel, P.O. Box 310658 Miami, Florida 33231.

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Software Engineer sought by company in Denver, CO specializing in business software solutions to work in Denver & other unanticipated job sites in the US. Design & develop software applications & software tools. These software applications incorporate client/server architecture &/or are web-based. Additionally design & develop middleware which allows different software applications to communicate with one another. Analyze requirements. Create designs & design documentation. Code, test, & de-bug the software applications. Use XML technology, Visual C++ & JAVA in the design & development process. Engage in project management as required. Requires Bachelor's in computer science or related field. Working knowledge in developing middleware, C++ & JAVA (working knowledge may be gained through employment experience or in an academic program). 8am-5pm, M-F, $55,100/yr (2 openings). Respond by resume to James Shimada, Colorado Department of Labor & Employment, Employment & Training Division Tower II #400,1515 Arapahoe Denver CO 80202 & refer to Job Order Number CO5012712

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Systems Analyst wanted in Houston, TX. Respond to HR Dept., A-Z Services, Inc., 4523 Bermuda, Sugarland, TX 77479.

Software Engineer - SAP Evaluate systems in conjunction with implementation of SAP system. Modify system or develop new system. Coordinate business processes & execute training & documentation. Implement various modules. Req: BS in Eng., Comp Sci, Comp Eng, Elect. Eng, IT or related field with 2 years exp. 40 hr-wk. Job/Interview Site: Irvine, CA. Send resume to Emprise Consulting LLC, 166 Amherst Aisle, Irvine, CA 92612.

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Designer (Web Sites). Design contemp. art & copy layouts inc. annual reports, publications, displays & conference material for websites. Create designs for animation & Java Scripts. Req: Bachelor's in Graphic Design or Business Admin. with emp. on websites designing. 40-hr. wk. Job/Interview Site: Culver City, CA. Please send resume to E-Design International, Inc., 9209 Agustine Lane, Culver City, CA 90230.

SAS Programmer Analyst. Develop and write computer programs utilizing statistical tools and methods. Bachelor degree in MIS, Econ, Statistics, or elm. major req'd as is 2 yrs exp. in statistical programming position. Prior exp. must include SAS. Competitive salary. Multiple openings. Resume to Wendell Tankersley, Resource Manager, Job No. 1866.24, Computer Task Group, Inc., 5875 Castle Creek Parkway, Suite 200, Indianapolis, IN 46250.

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Programmer Analyst sought by company in Denver, CO specializing in business software solutions to work in Denver & other unanticipated job sites in the US. Design & develop software applications & interoperability software infrastructure that allow the company's suites of applications to access & operate with partner software solutions. Analyze requirements. Create designs & design documentation. Code, test, & de-bug the software applications. Use JAVA, C++, XML & object oriented programming techniques in the design & development process. Requires Bachelor's in computer science or related field, 1 yr designing & developing computer software application using JAVA, C++ & object oriented programming techniques. 8am-5pm, M-F. $58,000/yr (2 openings.) Respond by resume to James Shimada, Colorado Department of Labor & Employment, Employment & Training Division, Tower II, 9400, 1515 Arapahoe, Denver, CO 80202, & refer to Job Order Number CO5012752

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Sr Consult - Implement new reuse & J2EE enabl Web Client Apps, PeopleSoft, CS.

Staff Consultant - Bus analyzing syst relate & assist studies attend to specifics of Visual BASIC, CS, Bus Eng or rel & 2 yrs exp in web or Programs/Anal.

MARYLAND

Programmer/Anal. - Dvlp tested Apps, test, docm, Dev, timetables, Lead dvlr & implementation of Standard Apps, Troubleshoot sys for customer prob SAMs in relate or CS, Bus Eng or rel & 1 yr with Dev Prod & write, complete programs Basic Using Prog SAMs in CS, Eng or rel, Perl exp or Web Dev.

Sr Comp Scientist - Does some projs to progress by Dev new software apps PKI or relate to CS, Bus Eng or rel & 1 yr exp in web dev EBAI, ERP Eng, or Web Specialist.

Comp. Scientist - Dev new & up old programs for new bus outsourcing app Prog in ASP, Dev and mnte SAMs in relate PKI, CS or rel & 2yr exp in or rel.

MISSOURI

Sr. ERP Prod. Specialist - Plan & coordinate techn as ERP consult, implement & any relate ERP implement tailored solutions & SAMs in relate or CS, Bus Acctg, Eng or rel & 1 yr exp in or relate.

OHIO

Sys. Designer - Design & dev bus solutions Dev, anal & present bus Prop, propose PKI or CS, Bus Eng or rel.

Analyst - Plan/dev effective analysis, 1 yr exp in relate field & 1 yr Java, Java Design tools and solutions, 2 exist SAMs or relate or CS, Bus Eng or rel or exist SAMs or relate or CS, Bus Eng or rel & 4 yrs exp.

VIRGINIA

Staff Consultant/Team Ldr. - Support tech dynamic & bus solutions PKI or relate + CS, Bus Eng or rel.

Sr Info Engr - Direct, manage & implement sys integration tech, client-server Lead or Consult in relate prog specs, 5 yr college exp or CS, Bus Physics, Eng or rel & 3 yr exp in or 5 yrs exp in Sys or Prog, Anal SAMs or relate & 1 yr exp.

Comp. Scientist - Consult, maintain, upgrade, for PeopleSoft HRS, Eng, & with Customize PeopleCode & PeopleSoft PKI or relate + CS, Bus Eng or rel.

Comp. Scientist - Anal & mtn, design & dev with developer & maintain HR/MFR SAMs or Pkgs in up or rel.

DB Admin - Support, plan dev, maintain installations & support Oracl apps SAMS to migrate to Cluster Eng or rel.

Sr. Member of Tech. Staff - Take leads role dev design PKI & Web Pgms, Command on Oracle Forms SAMs in PKI, CS, Bus, or rel.

Sr. Tech. DB Specialist - Technical role to solve real issues & design tools, dev, apply integration & implement DBMS family, or relate or CS & 7 yr exp in or rel or 4 bach degree exempt.

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Software engineer to design, develop and test computer programs for business applications, analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Oracle 8.0, Perl and HP Open View. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of Oracle 8.0, Perl and HP Open View. Salary: $72,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: JS Supervisor, Greene County Team PA Career link, 4 West High Street, Waynesburg, PA 15370-1324. Job No. WEB222184.

SOFTWARE ENGINEER to design develop, implement and maintain application software using: ILE RPG, RPG IV, 400, CL/400, EDI, CGI, HTML, SOA, SEU, RLU, DFU, DBU, Query/400, SQL/400 and Net.Data on AS/400 platform. Require: B.S. degree in Computer Science, an Engineering discipline, or a closely related with five years of experience in the job offered or as a Programmer/Systems Analyst. Competitive Salary offered. Send resume to: Colleen Murphy, Director of HR, FiberSol Packaging Corp., 1531 NW 12th Avenue, Pompano Beach, Fl 33069. Attn: Job PT

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SOFTWARE ENGINEER

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Jboulder, Oracle 8i, PowerScript and UML. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of Jbuilder, Oracle 8i, PowerScript and UML. Salary: $80,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Director, Pittsburgh/Allegheny Co. Career Link, ATTN: JS Supervisor, 425 Sixth Avenue, Suite 2200, Pittsburgh, PA 15219. Job No. WEB222210.

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Software engineer to design, develop and test computer programs for business applications, analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Java, JDK 1.2, CGI-Perl, Oracle and JRun. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of Java, JDK 1.2, CGI-Perl, Oracle and JRun. Salary: $66,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: JS Supervisor, Fayette County Team PA Careerlink, 32 Iowa Street, Uniontown, PA 15401-3513. Job No. WEB222177.

SOFTWARE ENGINEER

Software engineer to design, develop and test computer programs for business applications, analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Oracle Forms 4.5, Oracle 7.3, Pro*C and Developer/2000. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer knowledge of Oracle Forms 4.5, Oracle 7.3, Pro*C and Developer/2000. Salary: $66,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Manager, Washington County Team PA Careerlink, Millcraft Center, Suite 150LL, 90 West Chestnut Street, Washington, PA 15301. Job No. WEB222182.

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SOFTWARE ENGINEER

Software engineer to design, develop and test computer programs for business applications, analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Java, JDK 1.2, CGI-Perl, Oracle and JRun. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of Java, JDK 1.2, CGI-Perl, Oracle and JRun. Salary: $66,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Manager, Armstrong County Team PA Careerlink, 1270 North Water Street, PO Box 759, Kittanning, PA 16201-0759. Job No. WEB222189.

SOFTWARE ENGINEER

Software engineer to design, develop and test computer programs for business applications, analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Lotus Script, Notes Domino, Oracle and PL/SQL. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer knowledge of Lotus Script, Notes Domino, Oracle and PL/SQL. Salary: $68,750/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Manager, Westmoreland County Careerlink, 300 East Hillis Street, Youngwood, PA 15697-1808. Job No. WEB222192.

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Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in JSP, C, Oracle 8.0 and iPlanet Enterprise Server. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and one year experience as a software engineer or computer programmer, knowledge of JSP, C, Oracle 8.0 and iPlanet Enterprise Server. Salary: $86,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Manager, Beaver County Team PA Careerlink, 2103 Ninth Avenue, Beaver Falls, PA 15010-3957. Job No. WEB222209.

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Apps Support

ley Dean Witter & Co. in December gave Oracle a "poor" rating on support (see chart).

In addition, 32% of the respondents said the quality of Oracle's support is declining. And 52% said that Oracle isn't a customer-centric company. The report, which was released last month, attributed much of the dissatisfaction to upgrade problems that many users encountered after Oracle released its E-Business Suite 11i applications two years ago.

Terracon, a Kansas City, Mo.-based engineering consulting firm, has been working to upgrade its systems to 11i for the past 18 months. Frank Milano, Terracon's CIO, said he has had to install 10 large sets of patches. But the patching process hasn't always been smooth. Milano said it took three months to fix a data-transfer bug between Oracle's accounts receivable and project management modules. "Once we discovered the problem, a simple patch ... should have taken days," he said.

Oracle isn't alone in drawing criticism. Stamford, Conn.-based Gartner Inc. said in a report this month that it has received increased complaints about SAP's support over the past six months. An informal survey of 19 users showed weaknesses in areas such as the speed with which SAP resolves support requests and the quality of information it provides to users while fixes are in the works, Gartner said.

Frank Rutigliano, a senior project manager at the New York Power Authority in Albany, said SAP's support workers are too quick to "wash their hands" of technical problems and make users pay extra fees to get consulting help.

Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Daly City, Calif., said customer satisfaction on support is elusive throughout the applications market. "When I talk to IT managers and CIOs, one of the consistent complaints I hear is that the overall quality of software and support is below expectations," he said.

A spokesman for SAP America Inc. said SAP officials don't view the Gartner survey as statistically valid. Without offering specific numbers, he said SAP's own quarterly surveys indicate that user satisfaction is trending upward.

Likewise, Oracle pointed to a survey of 4,786 application users that it conducted in December. A spokeswoman said 92% of the users indicated that they planned to continue using Oracle's support services. In addition, Oracle officials said last fall that the quality and support issues affecting 11i upgrades were "waning."

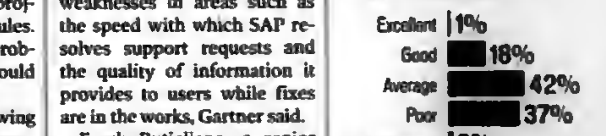
Several users last week said they think Oracle's application support has improved from where it was three years ago, when the company made major changes in response to sharp complaints from users.

Oracle's support staff is better managed now, said Joe Imbimbo, an Oracle applications database administrator at New York-based recruiting firm TMP Worldwide Inc. But Imbimbo said he would like to see Oracle release higher-quality patches (see related story).

Pat Dues, chairwoman of the OAUG customer support council and a project manager in the Las Vegas city manager's office, said users should bring problems to higher levels if need be. "I think some users tend to get lost in the chasm of Oracle support and slip through the cracks," she said. ▶

Support Calls

How would you rate Oracle's application support capabilities?



Base: 139 members of the Oracle Applications Users Group (OAUG) surveyed in December

SOURCE: THE GAUB AND MORGAN STANLEY DEAN WITTER & CO., NEW YORK

Software Patches Add to IT Workload

A big source of frustration for some users of enterprise applications are the patches that vendors develop to fix bugs in their software.

"I've found these patches fix things, but they also break things [in other parts of a system]," said Joe Imbimbo, an Oracle applications database administrator at TMP Worldwide. Oracle's patches require extensive testing to judge their effects on the applications themselves and on supporting products, such as TMP's Oracle databases, Imbimbo said. Oracle could save users time and effort if it better documented the parts of its applications that the new patches might affect, he added.

Chuck Virag, an IT bureau chief for the Montana state government, said Pleasanton, Calif.-based PeopleSoft Inc. has improved its customer support since early last year. But Virag added that he remains cautious about installing patches issued by PeopleSoft. "We assume they have not been adequately tested," he said.

Frank Milano, CIO at engineering consulting firm Terracon, said Oracle typically releases packs containing multiple patches. That may be easier for some users, but Milano said it puts a strain on smaller companies with limited IT resources. Oracle's "typical solution is to blow in a large patch set, and in many cases, that's just not feasible [for us to install]," he said.

– *Marc L. Songini*

Continued from page 1

Research

storage and networking gear. "Things that we had slated to buy in 2002 we bought in 2001 because we could get such a good price," Homa said. "Discounts were 10% to 20% above normal for year-end discounts. It was a great time to buy technology. We haven't cut back on our research because we still think it's very important."

What he needs most from his key research suppliers — Gartner Inc. and Boston-based AMR Research Inc. — is specific product-evaluation data.

But Hannaford's case is an anomaly, according to AMR Research CEO Tony Friscia. "In a recession, most people aren't buying anything new" in the areas of hardware or software, Friscia said.

So AMR is retooling its research offerings to include ROI analysis models and benchmarking tools to help users get the biggest bang from the hefty IT investments they have already made.

AMR also reduced its workforce by 10% in November, cutting 30 analysts and salespeople from its staff, which now totals 235 people (see chart). But Friscia said this hasn't negatively affected service to users, because the ratio of analysts to user clients remains the same.

"We grew our staff pretty aggressively in the beginning of 2001 on the assumption that we'd come in at revenue of $60 million-plus," he said.

As it turned out, AMR posted revenue of $48 million in fiscal 2001, up from $42 million in fiscal 2000 but well shy of its ambitious projection for last year. Meanwhile, the research firm's client base shrank from 1,060 to about 1,000.

Gartner, which has 650 analysts and about 11,000 clients, who spend an average of $84,000 per year at the firm, is focusing more on company-specific research and consulting, said Gartner CEO Michael Fleisher. Revenue for this part of the business is up 8% over last year, he added.

"Clients are looking for more consultative help and measurement services. These are very critical in a tough economy," Fleisher said.

So is staying ahead of top management, which seems to be relying even more heavily on technology to pull through the economic downturn, said Judy Zilka, an IT manager at The Andersons Inc., a $900 million agricultural products company in Maumee, Ohio.

That's one reason Anderson retained its flat-rate subscription to Gartner's Advisory Service. However, Andersons did reduce what it spends for additional users to tap into the research. This is because the cost of each added user soared from $500 in 2001 to $15,000 this year, Zilka said.

"The business people are reading the computer magazines and coming up with strategies that we need to apply technology to. It's difficult to stay ahead, but if you stay status qun with technology, you can't compete," she said. ▶

Analyze This

AMR Research Inc.
Reduced by 10% in November

Gartner Inc.
Reduced by about 6% last July and another 1% last month

Giga Information Group Inc.
Reduced by 20% in 2001

Forrester Research Inc.
Reduced by 22% last month

IDC
Reduced by 4% last July

Meta Group Inc.
Reduced by 10% last April and another 7% this month

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FRANK HAYES/FRANKLY SPEAKING

Pointed Questions

IT'S CALLED A PROXY HUNTER. That sounds a little more elegant than "security hole hunter," which is really what this kind of software does. Among other things, proxy hunters use a word list to probe Web sites, looking for files that are on the server but not linked to a company's home page.

In December, a hacker pointed a proxy hunter at Comcast Business Communications' Web site and hit pay dirt: a database of potential customers. He also found Web servers he could access using common log-ins and passwords such as *user* and *test*.

The 21-year-old hacker didn't pick Comcast's site at random. According to a Feb. 8 *Computerworld.com* news story by reporter Todd Weiss, the hacker knew Comcast had just bought AT&T Broadband. And he figured that Comcast's Web administrators would be facing a huge amount of work in the wake of the buyout and that they'd probably get sloppy.

He was right. They did get sloppy. There were those servers with easy-to-guess passwords. And that database of customer leads — *real* customer leads, by the way, not the dummy data that should have been used with a Web application that was being tested. And other files that shouldn't have been sitting on Web servers, without Web links but accessible to anyone who could guess the file names.

At this point, maybe you're feeling some sympathy for Comcast. Most likely, though, you're thinking that this couldn't happen to your systems. Your administrators wouldn't really do things that dumb, right? Nobody on your staff would actually shortcut your procedures that way — would they?

Maybe instead of congratulating yourself oo how good you are, you should be asking some pointed questions.

Do you have well-defined procedures for administering your Web servers? And have those procedures been vetted by a security expert to spot any glaring holes? And does everyone on your staff know what those procedures are — and actually follow them?

How often do administrators update and patch your Web server software? Who's in charge of keeping track of reported security holes and vendor-issued patches? Where's the database where that information is kept?

Frank Hayes, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

How often does an administrator catalog the complete contents of your Web servers and compare that against what's *supposed* to be there? And when was it done last?

When did an administrator last scan the server logs for patterns that might spot hackers at work? Do your administrators use well-known hacking tools, such as proxy hunters, to find vulnerabilities?

And when *were* the passwords on your servers last changed?

Do your Web developers use your production servers to test their new applications? If so, do those test versions use dummy data or live information? And do the developers delete the applications after each test, or do they leave them up for anyone in the outside world to access?

And — maybe most important — when your administrators' workload takes a big jump because of a merger or acquisitioo or major Web initiative, do you beef up the staff to make sure they're not stretched thin?

Because when they're stretched too thin — well, that's when a Comcast happens.

As it turns out, there's a happy ending to the Comcast incident — sort of. This particular hacker calls himself a security consultant, so he notified Comcast of the problems. Comcast denied its systems had any vulnerabilities. The hacker then posted some of the information oo an Internet security forum. That's when Comcast finally took notice — and pulled its site down for security improvements.

Comcast was lucky that this hacker was fishing for business — not looking for a way to attack its systems or steal its customer data.

Which leads to the most pointed question of all: Will you be so lucky?

SHARK TANK

IT SERVICES manager with no real technical background decides to cut costs by putting UPSes only on network servers and pulling them off all workstations. "So a week later, during another all-too-frequent power hit, all the servers stay up," says sysadmin pilot fish. "But no one can access them, since all admin functions are performed from the workstations that no longer have UPS protection."

NETWORK MANAGER turns thumbs down on IT pilot fish's proposal calling for redundant ATM carriers. "It's never the carriers that break down; it's always the local loop," boss says. Less than a week later, a trans-Atlantic cable is cut and puts company's entire Eurasian operations out of touch. "And when *his* boss asks why there was no redundancy, he states that his staff never suggested it," says fish.

ON AN OVERSEAS business trip, boss sends IT pilot fish an e-mail with strange instructions: Open the attachment, click on the box and enlarge it. Puzzled, fish opens the attachment to find a tiny box. "I drag the box out and start to see text appearing. Then his logic dawned on me," says fish. "He was trying to keep his attachment as small as possible."

WORK ORDERS are backing up for this company's desktop support technicians, reports a pilot fish – there's regularly a month's worth in the queue. That's too much, says IT manager, so he comes up with a policy that will trim the queues without hiring more staff: "All work orders older than three weeks will be deleted from the system."

CEO TAKES IT upon himself to, um, motivate the troops: "All my friends are billionaires, and I'm only a millionaire. It's embarrassing. I want you to make me a billionaire!" We're writing pizza-delivery software, pilot fish points out. "Wait, I've got an idea," says boss. "On the Web order form, write, 'Smell the pizza.' "

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